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U.S. DEPARTMENT OF COMMERCE / Environmental Science Services Administration

Environmental Data Service

KEY TO METEOROLOGICAL RECORDS DOCUMENTATION NO. 5.313

Catalog of Meteorological Satellite Data-ESSA 3 Television Cloud Photography

Part 2

PURPOSE

The Key To Meteorological Records Documentation Series has been established to provide guidance information to research personnel making use of climatological data.

Frequently users of such data have found it necessary to spend a great deal of time establishing whether the criteria for observing or computing various elements have changed over the period of record or in what form the data are available.

It is therefore hoped that the presentation of this series may not only conserve valuable time but may have a direct influence in improving the accuracy of research results.

EARLIER TIROS AND ESSA DATA CATALOGS

Earlier catalogs of TIROS and ESSA Meteorological Satellite data are available in this series, as follows:

No. 5.31 "Catalogue of Meteorological Satellite Data - TIROS I Television Cloud Photography", published in 1961, price 70 cents.

No. 5.32 "Catalogue of Meteorological Satellite Data - TIROS II Television Cloud Photography", published in 1963, price 20 cents.

No. 5.33 "Catalogue of Meteorological Satellite Data - TIROS III Television Cloud Photography", published in 1962, price 70 cents.

No. 5.34 "Catalogue of Meteorological Satellite Data - TIROS IV Television Cloud Photography", published in 1963, price $1.00.

No. 5.35 "Catalogue of Meteorological Satellite Data - TIROS V Television Cloud Photography", published in 1964, price $1.75.

No. 5.36 "Catalogue of Meteorological Satellite Data - TIROS VI Television Cloud Photography", published in 1964, price $2.00.

No. 5.37 "Catalogue of Meteorological Satellite Data - TIROS VII Television Cloud Photography Part 1 June 19, 1963, to December 31, 1963", published in 1965, price $1.25.

No. 5.37 "Catalogue of Meteorological Satellite Data - TIROS VII Television Cloud Photography Part 2 January 1, 1964, to June 30, 1964", published in 1965, price $1.00.

No. 5.37 "Catalogue of Meteorological Satellite Data - TIROS VII Television Cloud Photography Part 3 July 1, 1964, to December 30, 1964", published in 1965, price $1.00.

No. 5.37 "Catalogue of Meteorological Satellite Data - TIROS VII Television Cloud Photography Part 4 January 1, 1965, to December 31, 1965", published in 1966, price 45 cents.

No. 5.38 "Catalogue of Meteorological Satellite Data - TIROS VIII Television Cloud Photography Part 1 December 21, 1963, to June 30, 1964", published in 1965, price $1.00.

No. 5.38 "Catalogue of Meteorological Satellite Data - TIROS VIII Television Cloud Photography Part 2 July 1, 1964, to December 31, 1964", published in 1965, price $1.00.

No. 5.38 "Catalogue of Meteorological Satellite Data - TIROS VIII Television Cloud Photography Part 3 January 1, 1965, to August 31, 1965", published in 1966, price 45 cents.

No. 5.39 "Catalogue of Meteorological Satellite Data - TIROS IX Television Cloud Photography Part 1 January 22, 1965, to April 30, 1965", published in 1966, price $1.75.

No. 5.39 "Catalogue of Meteorological Satellite Data - TIROS IX Television Cloud Photography Part 2 May 1, 1965, to July 26, 1965", published in 1967, price $1.25.

No. 5.310 "Catalogue of Meteorological Satellite Data - TIROS X Television Cloud Photography Part 1 July 2, 1965, to September 30, 1965, in press.

No. 5.311 "Catalogue of Meteorological Satellite Data - ESSA 1 Television Cloud Photography Part 1 February 3, 1966, to March 31, 1966", published in 1966, price $1.00.

U.S. DEPARTMENT OF COMMERCE
Alexander B. Trowbridge, Secretary
ENVIRONMENTAL SCIENCE SERVICES ADMINISTRATION
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ENVIRONMENTAL DATA SERVICE
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KEY TO METEOROLOGICAL RECORDS DOCUMENTATION NO. 5.313

Catalog of Meteorological Satellite Data-ESSA 3 Television Cloud Photography

Part 2

January 1, - March 31, 1967

For sale by the Superintendent of Documents, U.S. Government Printing Office
Washington, D.C., 20402 - Price $1.50

PREFACE

This issue is number two in a series of catalogs describing the television cloud photographs obtained by ESSA 3 meteorological satellite. The material in this issue covers the period of January, February and March of 1967. The preparation of this catalog was expedited by computer usage, thus it is being published prior to part one in the series which is being prepared manually. The maps and listings generally follow the pattern established in the "Catalogue of Meteorological Satellite Data - TIROS I Television Cloud Photography," published as No. 5.31 in the Weather Bureau Series Key to Meteorological Records Documentation. However, digitized cloud maps replace the manually constructed nephanalyses which have been used in previous catalogs. There are two maps for each day; the first polar stereographic projection in each set is for the Northern Hemisphere and the second for the Southern Hemisphere. These maps are arranged according to pass day.

Documentation Section
National Environmental Satellite Center

USING THE CATALOG

1. Scan the digitized cloud maps for the dates and areas of particular interest.
2. When a picture of interest is located, use the appropriate track map, figures 2 and 3, to determine the track numbers by which to order.
3. When the track number has been determined, along with the date on which the pass was acquired, the film can be ordered from the National Weather Records Center, Asheville, N. C., at a cost of $6.50 per 100 foot reel.
4. Information for a particular pass, such as start time, subsatellite point (the point where the local vertical through the satellite intersects the earth's surface), and track number, may be determined by using the tabulated listings preceding the digitized cloud maps.

CATALOG OF METEOROLOGICAL SATELLITE DATA

ESSA 3 TELEVISION CLOUD PHOTOGRAPHY

PART 2 - January 1, 1967
to March 31, 1967

The ESSA 3 meteorological satellite, launched on October 2, 1966 by the National Aeronautics and Space Administration, is the third Environmental Survey Satellite in the TIROS Operational (TOS) System. ESSA 3 was put into a nearly circular, sun-synchronous polar orbit, approximately 892 statute miles above the earth's surface with an apogee of 925 statute miles and a perigee of 859 statute miles. The orbit is inclined 79° (Retrograde) to the equatorial plane with an orbital period of 114.5 minutes which corresponds to slightly more than 13 passes around the earth each day.

ESSA 3 is a TIROS type satellite in a "cartwheel" configuration which allows earth-oriented picture coverage. The spacecraft is spin-stabilized and magnetically torqued to a wheel attitude, so that the spin axis is normal to the plane of the orbit and the radially mounted cameras view the earth once each spacecraft revolution.

The cameras in the ESSA 3 satellite are one inch diameter vidicons (television camera tube) of the Advanced Vidicon Camera System (AVCS) type. Each picture covers an area of 4,000,000 square miles. One camera provides full global coverage, therefore, two cameras provide full system redundancy.

Each of the cameras can independently take pictures and store them for later play back to the Command-and-Data-Acquisition (CDA) stations located at Wallops Station near Chincoteague, Va., and Gilmore Creek, Fairbanks, Alaska

Pictures, taken every 260 seconds, are obtained in sequences of twelve frames to a pass. Each frame is electronically gridded by computer with latitude and longitude lines and geographic outlines merged with the picture. An identification legend underneath each picture provides the following information: year, month, day, hour, minute and second of picture taking time; track and zone numbers; station initial; satellite number; mode; camera; latitude of subsatellite point; latitude spacing of grids in degrees; longitude of subsatellite point; longitude spacing of grids in degrees; orbital pass number; frame number; and sun glint position.

In the example of figure 1, the legend indicates the picture was taken on orbital pass number 1675 by ESSA 3 and that it is a TAPE picture taken by camera 2 on February 12, 1967 at 203807Z. The frame is number four in the sequence and was acquired at Fairbanks, Alaska. The picture is located in the area of track 4 (TABLE 1) zone 58 (not referenced), with the subsatellite point of the picture located at 25°N and 105°W. The grids are spaced 5° both in latitude and longitude and sun glint is shown in the picture at 19°N and 109°W.

For ESSA 3 the system of "TRACKS" is used to identify the general geographic areas over which picture sequences were taken. These tracks are shown on the locator maps (figs. and listed in the track table (TABLE 1) which appear in this catalog immediately following the tabulated listings. The track boundaries are parallel to the path followed by the subsatellite point during the daylight portion of each orbital pass. The width of each track is exactly equal to the amount the earth rotates between consecutive passes. Thus, in general, the subsatellite point makes one traverse along each track each day (from midnight to midnight, GMT). The track boundaries are fixed permanently for the life of ESSA 3 , and are arbitrarily referenced to the point 0° latitude, 0° longitude, with track numbers increasing westward.

Since the ESSA 3 orbital period of 114.5 minutes is not an exact submultiple of 24 hours, the satellite starts 12 and 13 passes on alternate days. This results in track 13 being much narrower than the others and, thus, it is not traversed everyday. There are also days on which one particular track is traversed just after GMT midnight, and again later the same day just before GMT midnight.

On the film reels, picture sequences are grouped together by track number and assembled

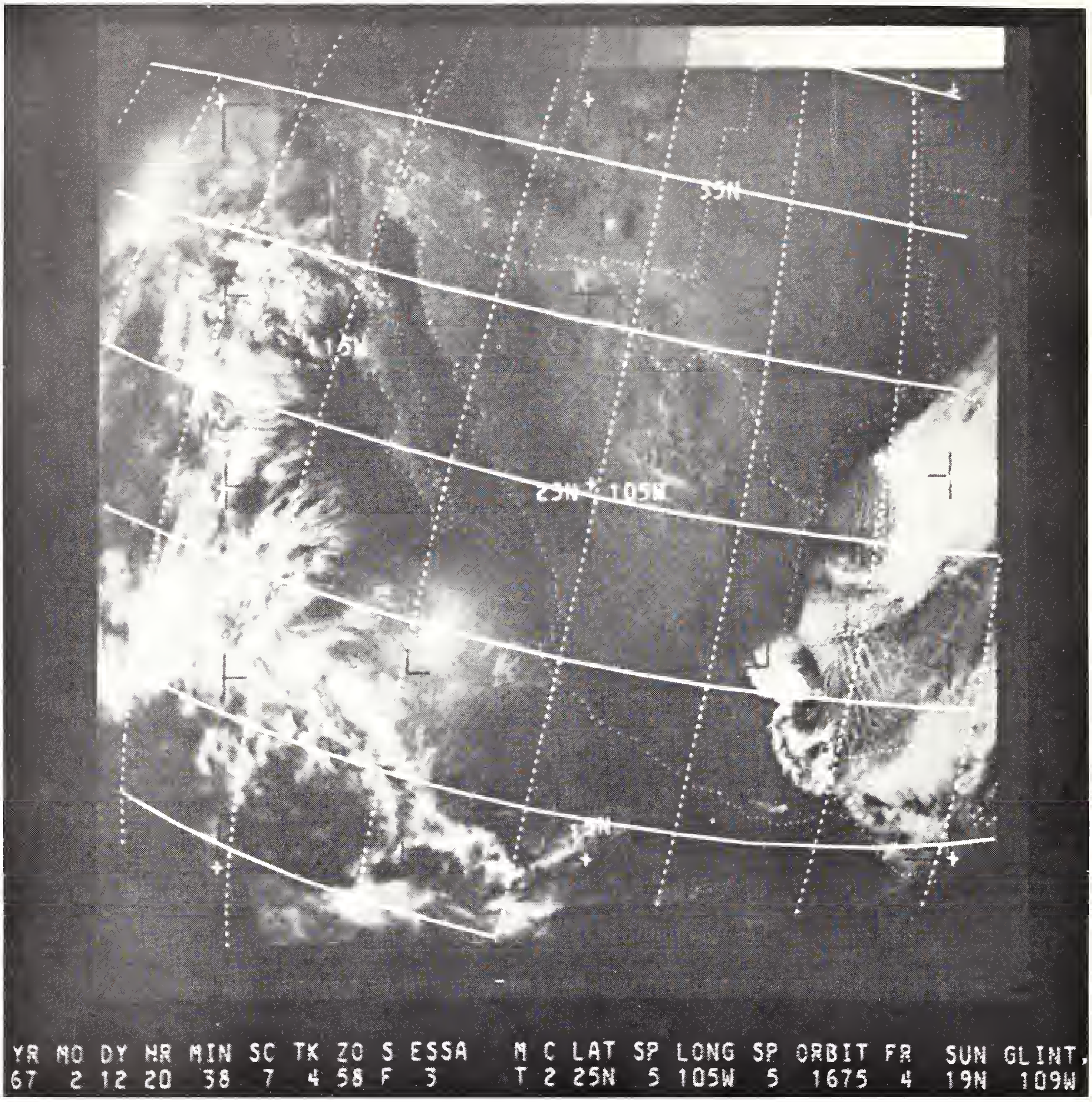
35N
25N
105W
YR MO DY HR MIN SC TK ZO S ESSA M C LAT SP LONG SP ORBIT FR SUN GLINT
67 2 12 20 38 7 4 58 F 3 T 2 25N 5 105W 5 1675 4 19N 109W

Figure 1 - Example of ESSA 3 Cloud Photography

in chronological order. Track numbers are stamped on the film immediately preceding the sequences to which they apply.

The sixteen pages of tabulated listings give descriptive information about the pictures obtained by ESSA 3. In the listings each picture sequence is described by one line, and the sequences are grouped together by date and track number. This is the order in which they appear on the film reel. The column headings and entries have the following meanings:

PASS: Orbital pass number on which the pictures were taken. On the digitized cloud maps in this catalog, these numbers appear beneath the date in the lower right corner of the page.

TRACK: Defines the geographic area which contains the path of the subsatellite point. The entries refer to the numbered areas outlined on figures 2 and 3 in this catalog.

C: Camera number indicated in the legend.

1 = Camera number one

2 = Camera number two

S: Command-and-Data-Acquisition (CDA) station which received the sequence.

W = Wallops Station, Va.

F = Fairbanks, Alaska

ALONG: Longitude of ascending node (equator crossing)

MODA: Month and day on which the pictures were taken.

HRMNSE: Time in hours, minutes and seconds of the first picture taken.

SUBSATELLITE POINT PICTURE LOCATION: Indicates the latitude in degrees of the subsatellite point for each of the twelve frames in the orbital pass sequence. First latitude column corresponds to picture frame No. 12.

Beginning with this catalog, a series of digitized computer mapped photographs will replace the manually constructed nephanalyses previously used in catalogs of this series. These DIGITIZED CLOUD MAPS are prepared by means of a high speed digital computer program. In this process the signals comprising the picture taken by the satellite are assigned numerical values to indicate the relative brightness of each element. These data are brightness normalized, earth-located and repositioned on standard map projections. Magnetic tapes are produced for input to a cathode ray film display device.* The photographic product resulting from this computer processing consists of 16 film images; eight polar stereographic octants, 6 Mercator segments and two reduced resolution polar hemispheric chips for each day. The digitized cloud maps used in this catalog are the reduced resolution nothern and southern polar hemispheric chips in which the latitude and longitude lines are spaced at 10°. In some instances, blank areas and mislocated clouds appear on the digitized cloud maps which are irregularities of the computer operation and should be disregarded.

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* A detailed description of the procedures used to produce these digitized cloud mosaics follows this section.

The track number and date should be utilized as the primary identification when ordering film. The track number for each sequence is shown on the equatorial line of the digitized cloud maps, and the date appears in the lower right corner of the page along with the inclusive pass numbers for the day.

The ESSA 3 master films are deposited at the National Weather Records Center (NWRC), Environmental Science Services Administration, Federal Building, Asheville, North Carolina 28801. Persons or institutions desiring copies may order them from the NWRC in the form of 35 mm. positive transparencies for projection or 35 mm. duplication negatives from which opaque prints can be made. Two days of pictures, including the digitized computer maps for each day (16 film chips per day), are stored on 100 foot reels, and should be ordered by track number and date. The digitized computer maps are also available separately on 100 foot reels, with each reel containing approximately 22 days of the film chips. These should also be ordered by track number and date. Orders must be placed for one or more complete reels, at a cost of $6.50 each, as it is not now possible to furnish copies of individual frames or to provide enlargements or other picture formats. The track numbers of the other tracks contained on the 100 foot reel can be obtained from the NWRC prior to ordering the film. All copies will be furnished with sprocket holes since the necessary film emulsion is available only in this form.

Available also from the NWRC, for the cost of reproduction, are reels of microfilmed nephanalysis charts for TIROS I thru TIROS IX.

DESCRIPTION OF PROCEDURES USED TO PRODUCE THE DIGITIZED MOSAICS*

The digitized mosaics of cloud pictures in this catalog, which replace the nephanalyses of the earlier catalogs, should facilitate retrieval of specific photographs for detailed study and for research purposes. The process by which these mosaics were produced is described herein.

1. INTRODUCTION

Nephanalyses prepared manually from typical orbital picture mosaics are expressable in terms of 8- to 10-min. teletypewriter messages--the equivalent of only 30,000 to 50,000 binary bits per mosaic. However the mosaic itself, expressed in digital form at 2-mile resolution with 4-bit brightness elements, amounts to more than 6×10^6 bits. Thus the data bulk is reduced about two orders of magnitude with hand methods. Although this is probably not a good indicator of information loss, developmental studies over the past several years do suggest that the images contain a far greater quantity of information than was previously extracted for operational use.

The purpose of this description is to acquaint the current and potential users of satellite cloud picture data with the computer products which are now operational. The procedure is described for producing full resolution rectified orbital mosaics for direct visual uses.

2. VIDEO DATA DIGITIZING AND FORMATTING

The first step in the process involves the digitizing of incoming video data which are received via microwave link from the Command and Data Acquisition (CDA) Stations. Much of the specialized equipment originally employed in digitizing Nimbus video data has been used in the present system. However, the presently operational Digital Format System (DFS) has undergone substantial logic changes so that it now operates in some seven different modes.

Briefly, in the case of video data from ESSA satellites, the analog (FM) signals are passed through a discrimination stage so that each raster line appears as a time variable d.c. voltage train. Each such voltage train is sampled repeatedly and converted to a corresponding series of 6-bit digits (bytes). The sample population is adjusted to 800, so that the 800 earth-viewing raster lines produce a 640,000-element array.

The sample bytes are packed into 24-bit words and transferred in parallel directly into the memory of a medium scale computer with the aid of certain interface control signals. Additional "interrupt" signals are provided to the computer through synchronizing detectors to arrange the incoming data into "frames" with reference to the beginning of each video raster and with reference to each horizontal raster line within the image. The edited raw digital data are finally produced on magnetic tape ready for further computer processing as described below.

3. DIGITAL RECTIFICATION PROCEDURES

The program for video data ingestion on the Control Data Corporation CDC-924 computer includes only minimum monitoring and conditioning of the raw sample values. Marker words are added in response to pulses received from the synchronizing detectors and other key format words are also added during the time interval between the acceptance of the digitized video data and the copying of the raw information onto digital video tape. There is need for further conditioning as the data are made available to the large-scale CDC-6600 computer.

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* This description is a condensed and edited version of "Operational Processing of Satellite Cloud Pictures by Computer," by C.L. Bristor, W.M. Callicott, and R.E. Bradford, in the MONTHLY WEATHER REVIEW, 94(8), August 1966, pp 515-527.

First, certain samples at the picture edges are removed by a preliminary edge-cropping procedure. The amount of data cropping in a raster row is indicated in an identification word which is inserted as the first word of each retained video raster row. (Plans are projected for the removal of noise bursts and fiducial marks and the interpolative insertion of realistic substitute video information.)

The data are further conditioned by a brightness calibration process. In order to make the individual frames uniform in brightness response, each 16 x 16 raster sample subset is calibrated for gray scale value. The raw video data range in gray scale from 0 to 63. A "zone argument" is determined for each subset and, from the proper zone calibration table, a replacement gray scale value is selected as a function of the original sample brightness. Thus "normalized" brightness fields are provided for the rectification and analysis programs. The final normalized gray scale values range from 0 to 14.

4. RECTIFICATION

The video data are now ready for transformation to arrays oriented to a map projection. The actual rectification process is, in effect, the assignment of raster elements to earth coordinates for replotting. Latitude and longitude values computed for every 32d raster point along every 32d raster row provide an open lattice of earth locations which are used as benchmarks for interpolating the locations of individual raster samples. This lattice was selected because: (a) the computation required for establishing a latitude-longitude value for every point is excessive, (b) the interval between benchmark points approximates a straight line on earth thus minimizing linear interpolation error, and (c) the value 32 is a binary factor permitting computer interpolation shortcuts. Finally, the open lattice latitude-longitude values are converted to map I and J coordinates in a square mesh map overlay. A benchmark table of map I and J values is generated for each video frame processed (reflecting its unique perspective).

5. ORBITAL MOSAICS

The video data are rectified to polar stereographic and Mercator map projections with grid mesh size commensurate with the original resolution. In addition, the polar stereographic array is a binary superset of the commonly used numerical weather prediction (NWP) grid system. This array is divided, step-wise, into two sets (see fig. 2). One is an 8 X 8 set of the NWP system and the other is an 8 X 8 set of the first thus providing a 64 X 64 superset. A linear map resolution of approximately 2 n.mi. at the equator and 4 n.mi. at the pole is realized.

The rectification or replotting logic requires memory space for all video data samples within the map array region being viewed. Video data are stretched or distorted over the array as a function of the map projection mathematics. This stretching is more severe in image areas where foreshortening is evident. Since the complete 64 X 64 polar array has 4096 X 4096 grid squares per hemisphere, methods for array storage compaction are required. An orbital swath of data requires a minimum of 2,464,000 grid squares, which exceeds the available high speed computer memory capacity. The polar array grid square area required for a swath is, therefore, broken into parts called subregion arrays. Each subregion is an irregular skew-shaped array containing those grid square "bins" in which imagery is stored. Because the bins are arranged serially in the computer, a two-dimensional indexing scheme is required for random access to the data (see fig. 3). Even so, the irregular arrays require memory space for 224,000 samples so only computers with large-scale memory capacity can be used efficiently for the rectification problem.

The Mercator grid square array contains 32 mesh intervals per degree of longitude. This fixed dimension array consists of 1600 columns and 2000 rows. The extreme right hand column is aligned with a meridian selectable in even 5° intervals and the top grid row overlies the top (also selectable) latitude limit (see fig. 4). The indexing problem is not as severe as that for the polar array because the subregions are rectangular.

The extreme volume of grid-square data involved in full resolution rectification stresses the need for efficient programing and for the elimination of redundant processing. In the

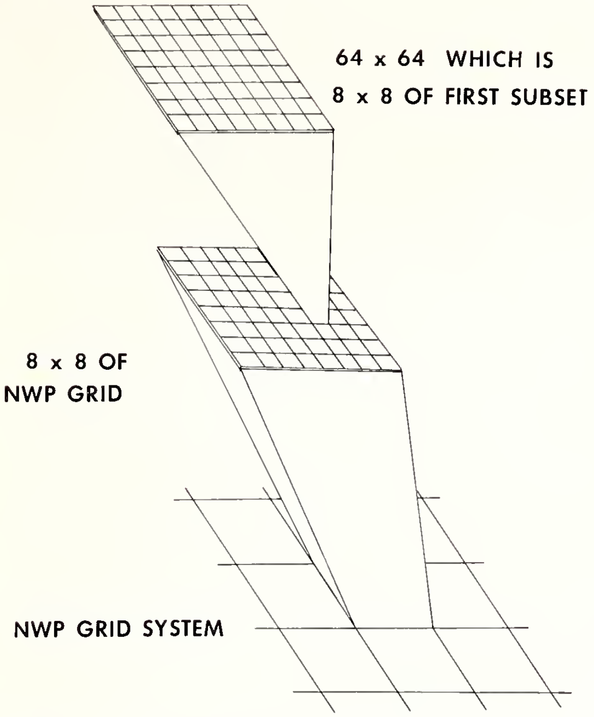


Figure 2 - The method is illustrated whereby the NWP mesh is subdivided to obtain a 64 x 64 superset. The two-step breakdown facilitates computer handling.

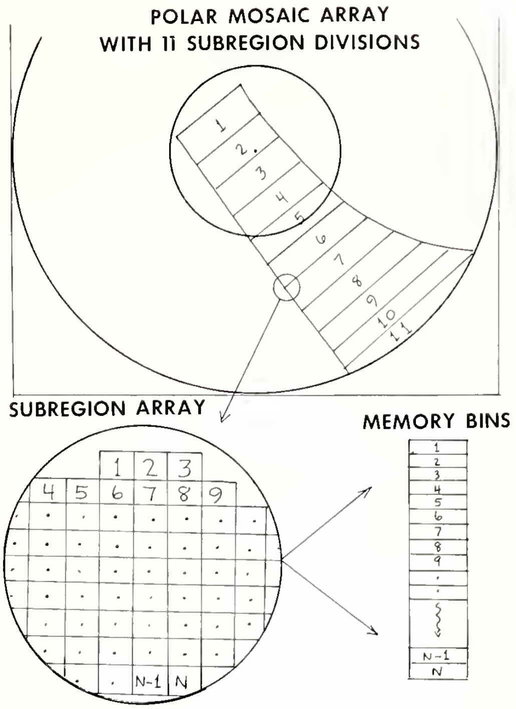


Figure 3 - The need for indexing logic is indicated by the sequential storage of skewed data trains.

case of Advanced Vidicon Camera System coverage of the ESSA satellites, there is generally considerable frame-to-frame overlap and significant overlap between orbital passes - particularly at middle and high latitudes. So the overlap problem is alleviated through the use of internal cropping logic.

The satellite's orbital characteristics and the camera shutter time schedule establish a set of cropping tables which are adjustable to process any desired picture portions. Each frame is cropped uniquely. This permits cropping to minimize sun glint problems and to avoid using imagery having poor brightness response or extreme foreshortening. Central raster lines provide better source imagery from the standpoint of brightness characteristics and resolution, but near the equator where overlap between passes is minimal, the center raster lines contain the sun glint. Where possible (at higher latitudes) sun glint is removed by the use of overlapping imagery (see figs. 5 and 6). Parameters are supplied to the rectification program in a format permitting asymmetric cropping, which eliminates processing of data outside the designated area. Minimum redundant processing is allowed to guarantee continuity within an orbital swath and to avoid gaps between passes.

Care is taken to eliminate data voids within the mosaic images thereby providing greater eye appeal and guaranteeing continuity for follow-on processing. There are areas in the rectified mosaics where the map resolution exceeds that of the data source. This is particularly true near the equator on the polar array and at high latitudes on the Mercator array. Since the coarser resolution video samples apply almost as well to adjacent higher resolution map squares, a simple areal average is used to fill voids in the polar array. For convenience the Mercator array is filled by a bi-directional row scan which propagates adjacent values into voids. Both processes create smooth mapped images where voids occur, preserving a continuous picture image. Examples of full resolution orbital mosaics are shown in figures 7 and 8.

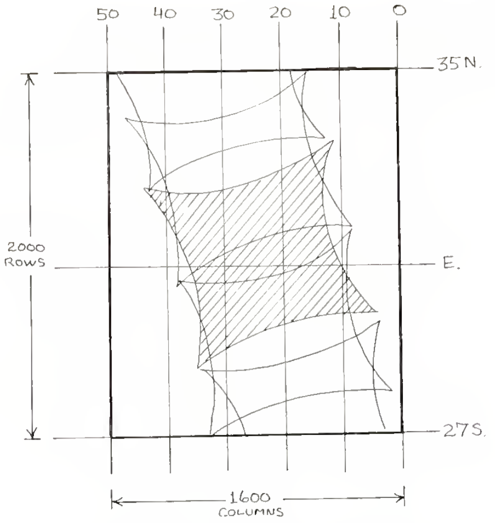
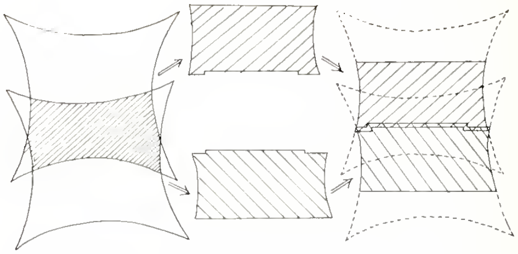

50
40
30
20
10
0
35N.
2000 ROWS
E.
27S.
1600 COLUMNS

Figure 4 - The Mercator mosaic map coverage is indicated (heavy border) along with the data array dimensions.



A. AMOUNT OF FRAME-TO-FRAME OVERLAP **B.** THAT PORTION OF EACH FRAME SET FOR PROCESSING **C.** UNCROPPED PARTS MERGE FOR A CONTINUOUS BAND

Figure 5 - The frame-to-frame overlap permits arbitrary cropping.

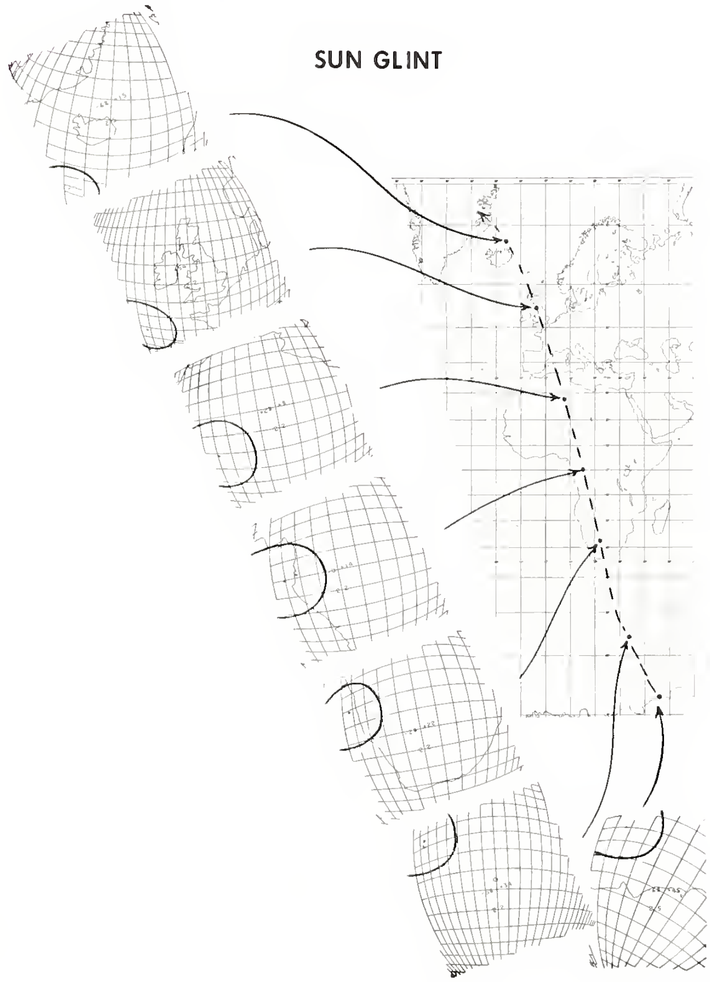


Figure 6 - Sample earth locator grids are shown as insets on a typical mapped pass for a sun synchronous orbit. It is to be noted that sun glint occurs in all frames.

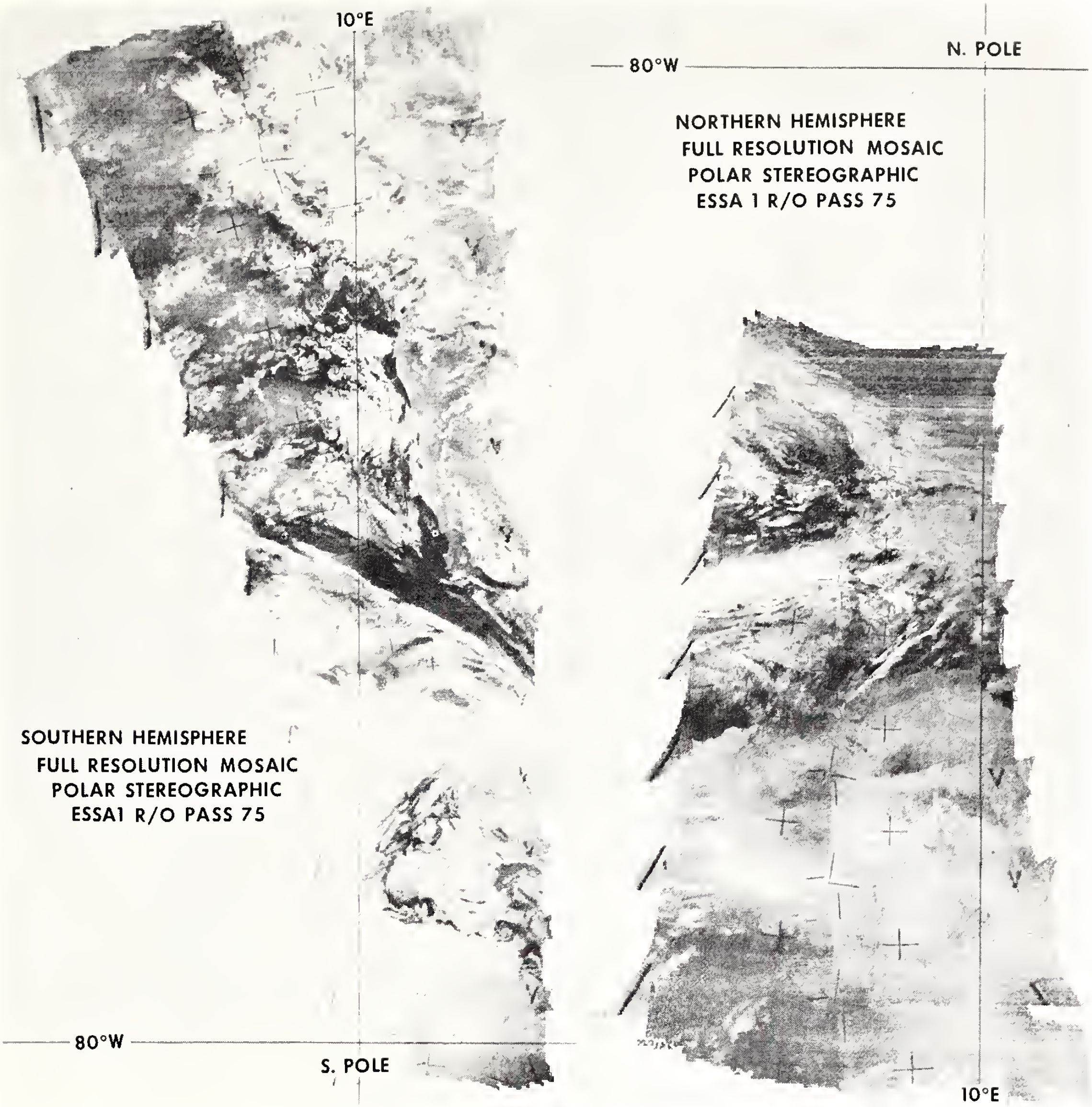

10°E
80°W
N. POLE
NORTHERN HEMISPHERE
FULL RESOLUTION MOSAIC
POLAR STEREOGRAPHIC
ESSA 1 R/O PASS 75
SOUTHERN HEMISPHERE
FULL RESOLUTION MOSAIC
POLAR STEREOGRAPHIC
ESSA1 R/O PASS 75
80°W
S. POLE
10°E

Figure 7 - Approximately 40 ESSA 1 pictures are combined into full resolution polar stereographic mosaics. Interpolative filler has been applied where foreshortened imagery has been "stretched" to the map array. Interim brightness calibration utilizing tables from figure 12 has not yet been applied, so "seams" are still apparent in certain overlap areas.

6. MONTAGE GENERATION

As the mosaics for adjacent orbital swaths are generated, they are blended into a composite image (montage). Since mosaic arrays are blended in such a way that the most recent data take precedence, a 24-hr. discontinuity occurs at the western edge of the most recent mosaic. Near the poles, where overlap is extreme, imagery is continually being replaced (see fig. 9). Both map montage arrays are maintained in auxiliary memory at all times and neither is purged of information. A continuous coverage product is thereby always available for image extraction or other use.

The polar map array is laid on the map base with the pole in the center and the 80° W. meridian aligned with the lower half of the center column. The Southern Hemisphere array is on a like map base except that the 80° W. meridian is the prime upper vertical meridian so that the Southern Hemisphere array is merely an extension of the Northern. The Mercator montage, with a longitude extent of 410° and a latitude coverage from 35° N., to 27° S., has a grid square dimension of 13,120 columns by 2,000 grid rows. The 50° longitude extension precludes splitting an orbital mosaic. The starting position for blending can be selected at any longitude. There is also an image discontinuity at the lateral array boundary limits.

Both arrays are accessible in parts or segments so that one desiring a specific coverage is able to extract only data in the area of interest. Current products are being projected for operational use on a 6-hourly basis to meet synoptic deadlines (see figs. 10 and 11). Variables which determine map coverage and resolution for the Mercator montage are set by alterable parameters. The polar montage array is bound to the NWP grid square system for compatibility purposes. A total of 830,000 (6-bit byte) computer storage bins is required for the larger segments of this rectification program and about 25 min. are required for processing one orbital picture swath.

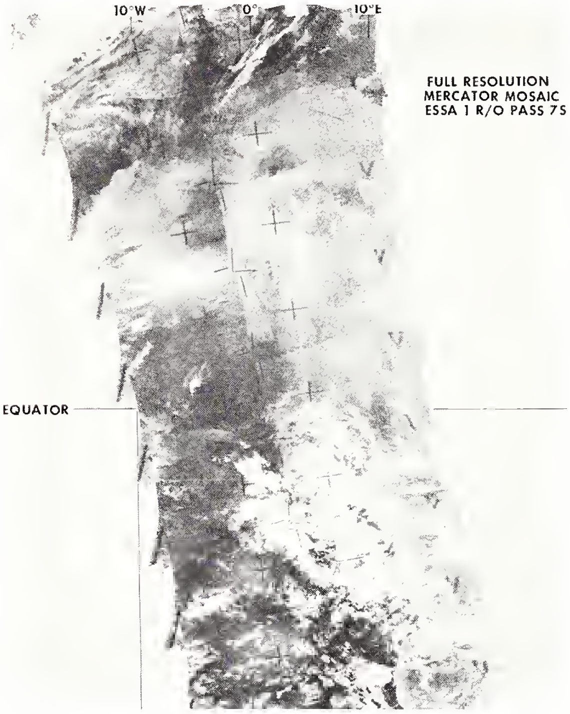


Figure 8 - The full resolution Mercator mosaic uses part of the picture sequence shown in figure 6.

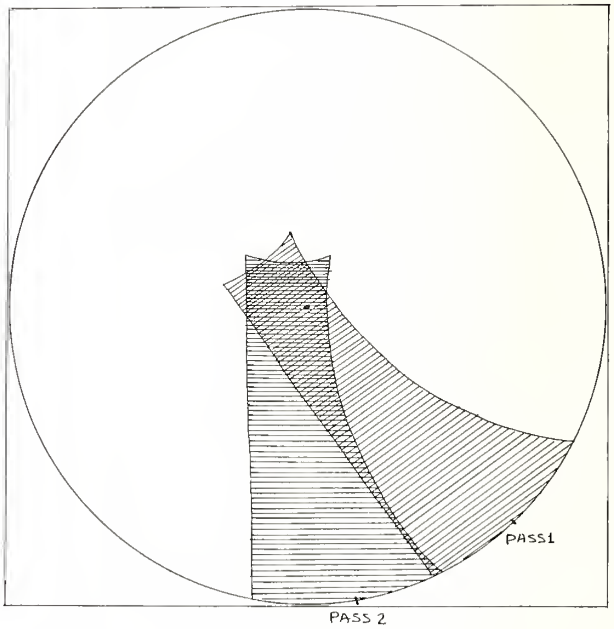


Figure 9 - Polar montage. Extreme overlap from pass to pass is indicated by the double shaded area.

7. CALIBRATION EFFECTS

In the description of the rectification process the mechanics of applying brightness calibrations were outlined. The data are altered according to the position in the picture-taking sequence of the frame in which the data reside and the position of the particular sample in the frame itself. The sample position is known only as it is a member of one of the 16X16 sample groups. This knowledge of how calibration is applied is now accompanied by an explanation of the reasons for calibrating and how the calibration function is obtained.

Apart from the cloud-earth scene, vidicon response variations may involve: (a) light transmission differences across the image plane arising from the properties of the optical system of the lens, (b) non-linearities in the x,y raster response pattern arising from the vidicon camera tube and associated electronics, (c) illumination variations due to solar angle (including extreme local sun glint problems), (d) "erase" efficiency and possible contamination from preceding scenes, and (e) time dependent anomalous responses - either response variations during a picture sequence from a single orbital pass or longer-period trends.

Based upon pre-launch calibration pictures and other information, item (d) is accepted as an uncontrolled contaminant with a brightness variation contribution of about 5 percent. If the camera system can be regarded as a stable sensor package, then one may attempt to compensate for the other listed items through a brightness calibration procedure.

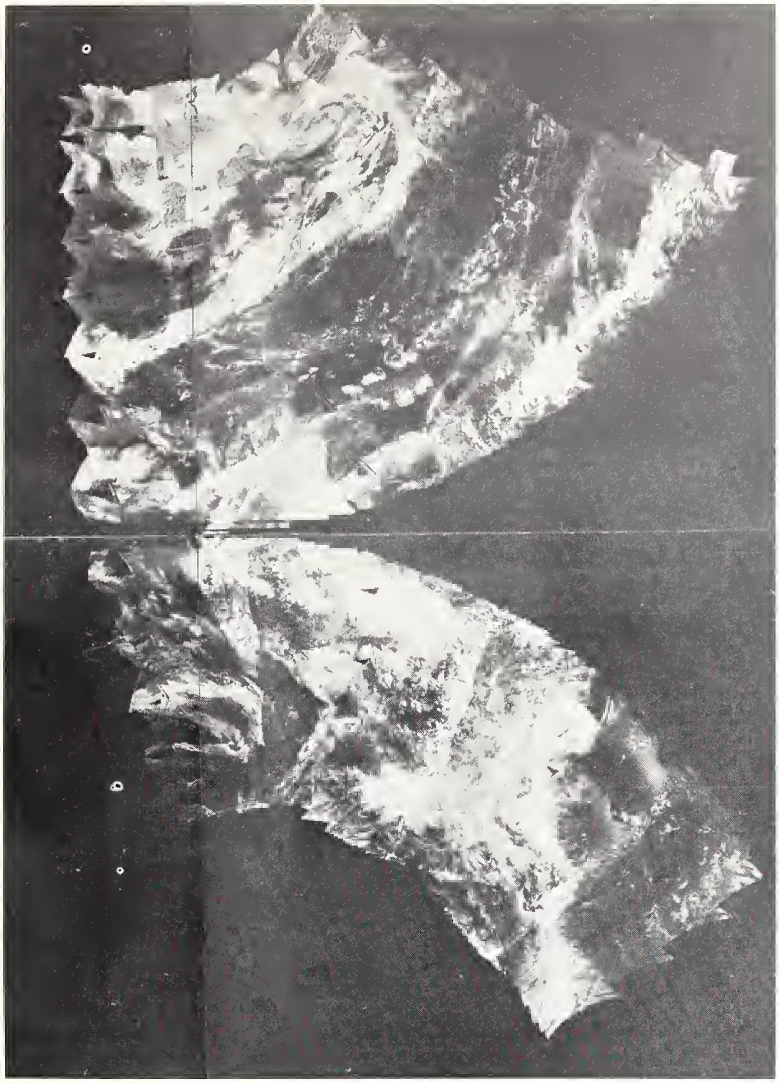


Figure 10 - Picture mosaics from adjacent passes are shown in polar stereographic montages. (Upper is Northern Hemisphere, lower is Souther Hemisphere) Reproduction uses a cathode ray film recorder. Latitude-longitude marks have been omitted from this early sample but the vertical seam between film segments is approximately 80° W.

The most glaring influence of the instrumentation on the data comes from the optical system (filter, aperture, and lens) immediately in front of the vidicon. The aperture controls the amount of light energy impinging on the vidicon face. The filter virtually eliminates the blue light, hence, the light scattered by the atmosphere. These two components are most relevent in determining absolute brightness response. The lens system employed introduces a substantial vignette effect as shown in figure 12. This effect produces a target-shaped, halftone pattern because the digitized data are discrete. Each digital level constitutes a zone. We describe each zone by the fraction (p_i) of the true image brightness presented to the camera system. The inverse of this fraction is the calibration factor for the zone. Two or more camera systems can be "equalized" by establishing the gradient function and maximum p_i for each. The target patterns for the two cameras of ESSA 1 are illustrated in figure 13. The satellite is sun synchronous, assuring constant sun angles to the cameras. Camera 1 is pointed away from the sun and has a larger aperture setting than camera 2 which is pointed toward the sun. Although the biased aperture settings tend to equalize the overall brightness of the images presented to the vidicons, the application of the "target factors" from figure 12 is required to maintain the integrity of the object illumination. The ability to apply such factors efficiently is significantly unique to computer processing. There is thus a facility for linearizing the dynamic gray scale range which is not fully realized in conventional photo processing.

Individual pictures so adjusted are merged into an orbital mosaic as a homogeneous image.

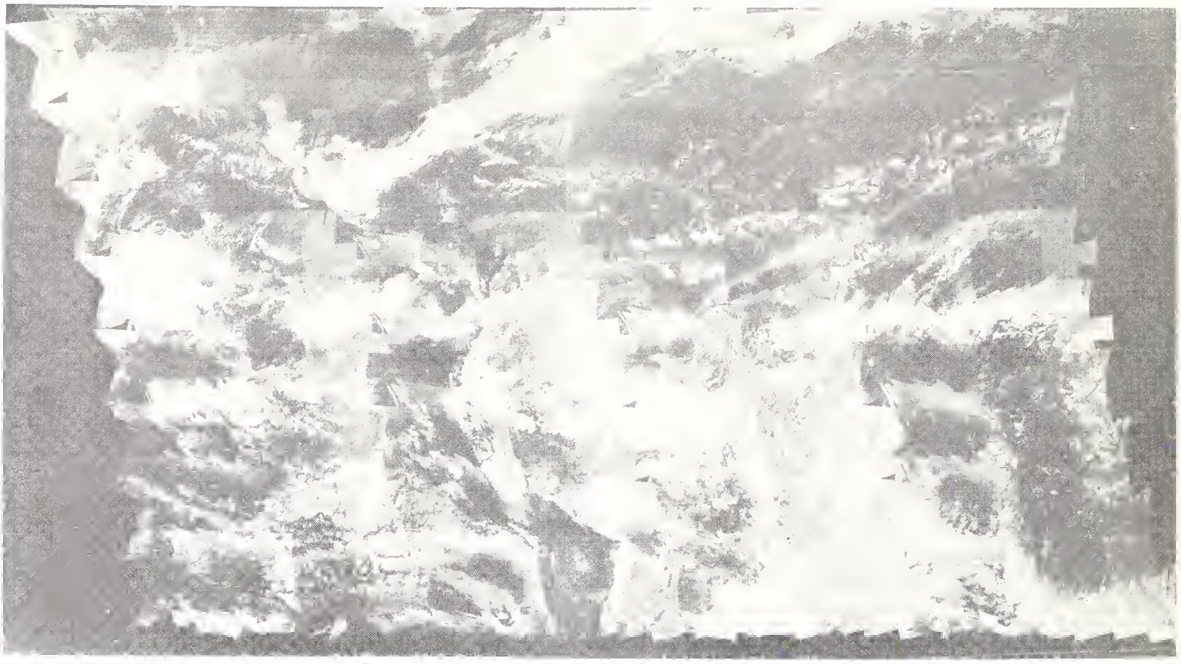


Figure 11 - Adjacent mosaics have been combined into a multi-pass Mercator montage similar to figure 9. Early versions of the brightness calibration tables have been used in both figures.

Merging mosaics into a montage poses the peculiar problem of accounting for the difference between illumination patterns. The light energy flux at or near the earth's surface is a function only of the angle of incidence of the light ray (disregarding atmospheric refraction, absorption, and scattering). This means that there is a flux discontinuity where mosaics join. The flux is equalized among the mosaics by employing the inverse of the solar incident angle function as a factor. This alteration of the observed images must be considered when the data are examined. There are two major ramifications of this illumination normalization: (a) the angle of incidence is unchanged, leaving (in fact enhancing) the original shadows, and (b) such physical measures as albedo must be considered "normalized" by rendering the flux constant throughout. The original scene is recoverable through knowledge of the illumination patterns and the method of merging the mosaics.

Current ESSA satellites, being sun synchronous, have constant illumination patterns which, when combined with the vignette patterns, provide frame calibration patterns that are dependent on latitute. By means of a standard set of zone tables according to the latitude of the center point of the picture, both calibrations are applied at the same time. The "latitudes" of the reference array tables change with the seasonal position of the sun with respect to the earth's latitude-longitude system.

Although the calibrating scheme has been discussed conceptually, the actual calibration tables are determined empirically. This technique automatically includes compensation for time dependent anomalous response. The structuring of the zone tables permits calibration for any empirically determined nonlinearities.

8. SUMMARY REMARKS

Satellite picture data processing by computer has been started in a practical real time operation. Flexibility has been the watchword in the logical design of the programing effort. The system is thereby relatively insensitive to superficial differences in image source data and may easily be modified as developments in output products dictate. Quantized outputs are expected to encourage further objective utilization of the products.

The programs represent a substantial investment in machine language coding so as to take maximum advantage of computer speed and memory capacity. Even so, projected higher resolution (and possibly color) imaging devices threaten to increase data volumes by one or two orders of magnitude within the next several years. This would likely lead to different applications and different information extraction goals. All of this could saturate today's largest computer and might well indicate the need for the newly projected parallel network computer.

Before that time, experience should provide guidelines for the specification of practical volumes of data to be computer processed commensurate with the application goals.

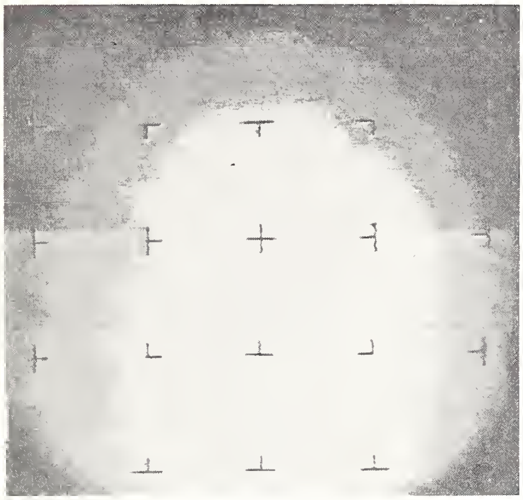


Figure 12 - A digital reproduction of a picture of a uniformly illuminated screen taken by the camera (AVCS) of the ESSA 3 prototype is shown. Although the screen illumination was maximum white, the camera response at the corners was near zero, showing the severity of the vignette effect.

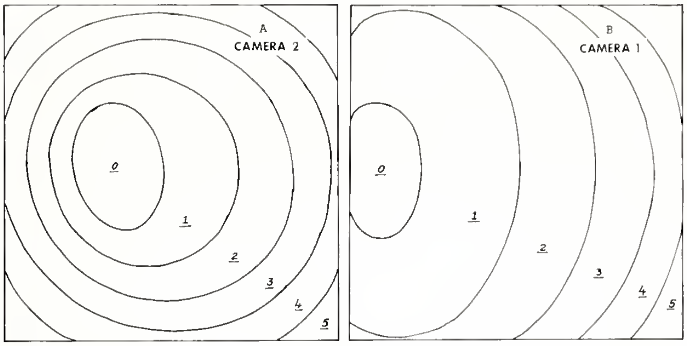


Figure 13 - The calibration zones are shown graphically for the two ESSA 1 cameras. (A) Camera 2 points toward the sun and (B) camera 1 points away from the sun. The vignette effect is obvious. The shift of the centers of the patterns (zone zero) to the left demonstrates the influence of the sun's position which is to the left with respect to the figures. Zone zero is the area of maximum response, hence, least adjustment. As the zone number (index) increases the amount of calibration adjustment increases.

PASS	TRACK	C	S	ALON	MODA	HRMNSE	SUB-SATELLITE POINT PICTURE LOCATION											
							LAT	LAT	LAT	LAT	LAT	LAT	LAT	LAT	LAT	LAT	LAT	LAT
1144	13	2	F	4E	1 1	132453	77S	68S	56S	43S	29S	16S	2S	10N	24N	37N	50N	63N
1145	1	2	F	24W	1 1	151917	78S	69S	56S	43S	30S	16S	3S	10N	23N	36N	49N	62N
1146	2	2	F	53W	1 1	171344	78S	69S	57S	44S	30S	17S	4S	9N	22N	36N	49N	62N
1147	3	2	F	82W	1 1	190814	78S	70S	57S	44S	31S	17S	4S	9N	22N	35N	48N	61N
1148	4	2	F	110W	1 1	210246	78S	70S	58S	45S	31S	18S	4S	8N	22N	35N	48N	61N
1149	5	2	F	139W	1 1	225722	78S	70S	58S	45S	32S	18S	5S	7N	21N	34N	47N	60N
1150	6	2	F	168W	1 2	005201	78S	70S	58S	45S	31S	18S	4S	8N	22N	35N	48N	61N
1151	7	2	W	164E	1 2	024642	78S	70S	58S	45S	31S	18S	4S	8N	22N	35N	48N	61N
1152	8	2	W	135E	1 2	044127	78S	70S	57S	44S	31S	17S	4S	9N	22N	36N	49N	61N
1153	9	2	W	106E	1 2	063614	78S	69S	57S	44S	30S	17S	3S	9N	23N	36N	49N	62N
1154	10	2	W	78E	1 2	083104	78S	69S	56S	43S	30S	16S	3S	10N	23N	37N	50N	62N
1155	11	2	F	49E	1 2	102558	78S	68S	56S	42S	29S	15S	2S	11N	24N	37N	51N	63N
1156	12	2	F	20E	1 2	122036	78S	68S	56S	43S	29S	16S	2S	10N	24N	37N	50N	63N
1157	1	2	F	8W	1 2	141500	78S	69S	56S	43S	30S	17S	3S	9N	23N	36N	49N	62N
1158	2	2	F	37W	1 2	160927	78S	69S	57S	44S	31S	17S	4S	9N	22N	36N	49N	61N
1159	3	2	F	66W	1 2	180357	78S	70S	57S	44S	31S	18S	4S	8N	22N	35N	48N	61N
1160	4	2	F	94W	1 2	195830	78S	70S	58S	45S	31S	18S	4S	8N	22N	35N	48N	61N
1161	5	2	F	123W	1 2	215306	78S	70S	58S	45S	31S	18S	4S	8N	22N	35N	48N	61N
1162	6	2	F	152W	1 2	234754	78S	70S	57S	44S	31S	17S	4S	9N	22N	35N	49N	61N
1163	7	2	W	180W	1 3	014237	78S	69S	57S	44S	31S	17S	4S	9N	22N	36N	49N	61N
1164	8	2	W	151E	1 3	033723	78S	69S	57S	44S	30S	17S	3S	9N	23N	36N	49N	62N
1165	9	2	W	122E	1 3	053211	78S	69S	56S	43S	30S	16S	3S	10N	23N	37N	50N	62N
1166	10	2	W	94E	1 3	072703	78S	68S	56S	43S	29S	16S	2S	10N	24N	37N	50N	63N
1167	11	2	F	65E	1 3	092157	77S	67S	55S	42S	28S	15S	1S	11N	25N	38N	51N	64N
1168	12	2	F	36E	1 3	111655	77S	67S	54S	41S	27S	14S	0N	12N	26N	39N	52N	65N
1169	13	2	F	8E	1 3	131139	77S	66S	54S	41S	27S	14S	0N	12N	26N	39N	52N	64N
1170	1	2	F	21W	1 3	150600	77S	67S	55S	42S	28S	15S	1S	11N	25N	38N	51N	63N
1171	2	2	F	50W	1 3	170027	77S	68S	55S	42S	29S	15S	2S	11N	24N	37N	50N	63N
1172	3	2	F	78W	1 3	185457	78S	68S	56S	43S	30S	16S	3S	11N	24N	37N	51N	63N
1173	4	2	F	107W	1 3	204930	78S	68S	56S	43S	30S	16S	3S	10N	23N	37N	50N	62N
1174	5	2	F	136W	1 3	224405	78S	69S	56S	43S	30S	16S	3S	10N	23N	37N	50N	62N
1175	6	2	F	164W	1 4	003838	78S	69S	56S	43S	30S	16S	3S	10N	23N	36N	49N	62N
1176	7	2	W	167E	1 4	023318	78S	69S	56S	43S	30S	16S	3S	10N	23N	36N	49N	62N
1177	8	2	W	138E	1 4	042801	78S	69S	56S	43S	30S	16S	3S	10N	23N	37N	50N	62N
1178	9	2	W	110E	1 4	062247	78S	68S	56S	43S	29S	16S	2S	10N	24N	37N	50N	63N
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1180	11	1	F	52E	1 4	101143	78S	69S	57S	44S	30S	17S	3S	9N	23N	36N	49N	62N
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1182	1	1	F	5W	1 4	140045	78S	70S	58S	45S	31S	18S	4S	8N	21N	35N	48N	61N
1183	2	1	F	34W	1 4	155512	78S	70S	58S	45S	32S	19S	5S	7N	21N	34N	47N	60N
1184	3	1	F	62W	1 4	174941	78S	71S	59S	46S	32S	19S	5S	7N	20N	34N	47N	60N
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1187	6	1	F	148W	1 4	233324	78S	71S	59S	46S	33S	20S	6S	6N	20N	33N	46N	59N
1188	7	1	F	177W	1 5	012805	78S	71S	59S	46S	33S	19S	6S	7N	20N	33N	47N	59N
1189	8	1	W	154E	1 5	032254	78S	71S	59S	46S	32S	19S	5S	7N	21N	34N	47N	60N
1190	9	1	W	126E	1 5	051742	78S	70S	58S	45S	32S	18S	5S	8N	21N	34N	48N	60N
1191	10	1	W	97E	1 5	071233	78S	70S	58S	45S	31S	18S	4S	8N	22N	35N	48N	61N
1192	11	1	F	68E	1 5	090726	78S	69S	57S	44S	30S	17S	3S	9N	23N	36N	49N	62N
1193	12	1	F	40E	1 5	110223	78S	68S	56S	43S	30S	16S	2S	10N	24N	37N	50N	63N
1194	13	1	F	11E	1 5	125703	78S	69S	56S	43S	30S	16S	3S	10N	23N	36N	49N	62N
1195	1	1	F	18W	1 5	145127	78S	69S	57S	44S	30S	17S	4S	9N	22N	36N	49N	61N
1196	2	1	F	46W	1 5	164543	78S	70S	58S	45S	32S	18S	5S	8N	21N	35N	48N	60N
1197	3	1	F	75W	1 5	184022	78S	70S	58S	45S	32S	18S	5S	8N	21N	35N	48N	60N
1198	4	1	F	104W	1 5	203455	78S	70S	58S	45S	32S	18S	5S	8N	21N	34N	47N	60N
1199	5	1	F	132W	1 5	222931	78S	70S	58S	45S	32S	19S	5S	7N	21N	34N	47N	60N
1200	6	1	F	161W	1 6	002407	78S	71S	59S	45S	32S	19S	5S	7N	21N	34N	47N	60N
1201	7	1	W	170E	1 6	021848	78S	71S	58S	45S	32S	19S	5S	8N	21N	34N	47N	60N
1202	8	1	W	142E	1 6	041332	78S	70S	58S	45S	32S	18S	5S	8N	21N	35N	48N	60N
1203	9	1	W	113E	1 6	060819	78S	70S	58S	45S	31S	18S	4S	8N	22N	35N	48N	61N
1204	10	1	W	84E	1 6	080309	78S	69S	57S	44S	31S	17S	4S	9N	22N	36N	49N	61N
1205	11	1	F	56E	1 6	095802	78S	69S	56S	43S	30S	16S	3S	10N	23N	36N	50N	62N
1206	12	1	F	27E	1 6	115241	78S	69S	57S	43S	30S	17S	3S	9N	23N	36N	49N	62N
1207	1	1	F	2W	1 6	134705	78S	70S	57S	44S	31S	17S	4S	9N	22N	35N	48N	61N
1208	2	1	F	30W	1 6	154132	78S	70S	58S	45S	31S	18S	5S	8N	21N	35N	48N	60N
1209	3	1	F	59W	1 6	173602	78S	70S	58S	45S	32S	18S	5S	8N	21N	34N	47N	60N
1210	4	1	F	88W	1 6	193035	78S	71S	59S	46S	32S	19S	5S	7N	21N	34N	47N	60N
1211	5	1	F	116W	1 6	212510	78S	71S	59S	46S	32S	19S	5S	7N	21N	34N	47N	60N
1212	6	1	F	145W	1 6	231949	78S	71S	59S	46S	32S	19S	5S	7N	21N	34N	47N	60N
1213	7	1	F	174W	1 7	011427	78S	71S	59S	46S	32S	19S	5S	7N	21N	34N	47N	60N
1214	8	1	W	158E	1 7	030911	78S	71S	58S	45S	32S	19S	5S	7N	21N	34N	47N	60N
1215	9	1	W	129E	1 7	050357	78S	70S	58S	45S	32S	18S	5S	8N	21N	35N	48N	61N
1216	10	1	W	100E	1 7	065902	78S	69S	57S	44S	30S	17S	3S	9N	23N	36N	49N	62N
1217	11	1	F	72E	1 7	085339	78S	69S	57S	44S	30S	17S	3S	9N	23N	36N	49N	62N
1218	12	1	F	43E	1 7	104835	78S	68S	56S	43S	29S	16S	2S	10N	24N	37N	50N	63N

PASS	TRACK	L	S	ALON	MODA	HRMNSE	SUB-SATELLITE POINT PICTURE LOCATION											
							LAT	LAT	LAT	LAT	LAT	LAT	LAT	LAT	LAT	LAT	LAT	LAT
1219	13	1	F	14E	1 7	124315	78S	68S	56S	43S	30S	16S	3S	10N	23N	36N	49N	62N
1220	1	1	F	14W	1 7	143739	78S	69S	57S	44S	30S	17S	3S	9N	22N	36N	49N	61N
1221	2	1	F	43W	1 7	163206	78S	70S	57S	44S	31S	18S	4S	8N	22N	35N	48N	61N
1222	3	1	F	72W	1 7	182636	78S	70S	58S	45S	31S	18S	4S	8N	21N	35N	48N	60N
1223	4	1	F	100W	1 7	202108	78S	70S	58S	45S	32S	18S	5S	8N	21N	34N	47N	60N
1224	5	1	F	129W	1 7	221544	78S	70S	58S	45S	32S	18S	5S	8N	21N	34N	47N	60N
1225	6	1	F	158W	1 8	001022	78S	70S	58S	45S	32S	18S	5S	8N	21N	34N	47N	60N
1226	7	1	W	174E	1 8	020502	78S	70S	58S	45S	32S	18S	5S	8N	21N	34N	48N	60N
1227	8	1	W	145E	1 8	035945	78S	70S	58S	45S	32S	18S	5S	8N	21N	35N	48N	60N
1228	9	1	W	116E	1 8	055432	78S	70S	58S	45S	31S	18S	4S	8N	22N	35N	48N	61N
1229	10	1	W	88E	1 8	074920	78S	69S	57S	44S	31S	17S	4S	9N	22N	36N	49N	61N
1230	11	1	F	59E	1 8	094412	78S	69S	56S	43S	30S	16S	3S	10N	23N	36N	49N	62N
1231	12	1	F	30E	1 8	113851	78S	69S	57S	44S	30S	17S	3S	9N	23N	36N	49N	61N
1232	13	1	F	2E	1 8	133315	78S	70S	57S	44S	31S	17S	4S	8N	22N	35N	48N	61N
1233	1	1	F	27W	1 8	152742	78S	70S	58S	45S	32S	18S	5S	8N	21N	35N	48N	60N
1234	2	1	F	56W	1 8	172212	78S	70S	58S	45S	32S	19S	5S	7N	21N	34N	47N	60N
1235	3	1	F	84W	1 8	191644	78S	71S	59S	46S	32S	19S	5S	7N	21N	34N	47N	60N
1236	4	1	F	113W	1 8	211120	786	71S	59S	46S	32S	19S	5S	7N	20N	34N	47N	60N
1237	5	1	F	142W	1 8	230559	78S	71S	59S	46S	32S	19S	5S	7N	20N	34N	47N	60N
1238	6	1	F	170W	1 9	010037	78S	71S	59S	46S	32S	19S	5S	7N	20N	34N	47N	60N
1239	7	1	W	161E	1 9	025520	78S	71S	59S	46S	32S	19S	5S	7N	21N	34N	47N	60N
1240	8	1	W	132E	1 9	045007	78S	70S	58S	45S	32S	18S	5S	8N	21N	35N	48N	60N
1241	9	1	W	104E	1 9	064456	78S	70S	58S	45S	31S	18S	4S	8N	22N	35N	48N	61N
1242	10	1	F	75E	1 9	083948	78S	69S	57S	44S	30S	17S	3S	9N	23N	36N	49N	62N
1243	11	1	F	46E	1 9	103444	78S	69S	56S	43S	30S	16S	3S	10N	23N	37N	50N	62N
1244	12	1	F	18E	1 9	122924	78S	69S	56S	43S	30S	16S	3S	10N	23N	36N	49N	62N
1245	1	1	F	11W	1 9	142348	78S	69S	57S	44S	31S	17S	4S	9N	22N	35N	49N	61N
1246	2	1	F	39W	1 9	161815	78S	70S	57S	44S	31S	18S	4S	8N	22N	35N	48N	61N
1247	3	1	F	68W	1 9	181245	78S	70S	58S	45S	32S	18S	5S	8N	21N	35N	48N	60N
1248	4	1	F	97W	1 9	200717	78S	70S	58S	45S	32S	18S	5S	8N	21N	34N	47N	60N
1249	5	1	F	125W	1 9	220153	78S	70S	58S	45S	32S	19S	5S	7N	21N	34N	47N	60N
1250	6	1	F	154W	1 9	235634	78S	70S	58S	45S	32S	18S	5S	8N	21N	34N	47N	60N
1251	7	1	W	177E	110	015115	78S	70S	58S	45S	32S	18S	5S	8N	21N	34N	48N	60N
1252	8	1	W	149E	110	034559	78S	70S	58S	45S	31S	18S	4S	8N	21N	35N	48N	61N
1253	9	1	W	120E	110	054046	78S	70S	57S	44S	31S	18S	4S	8N	22N	35N	48N	61N
1254	10	1	W	91E	110	073536	78S	69S	57S	44S	30S	17S	3S	9N	23N	36N	49N	62N
1255	11	1	F	63E	110	093029	78S	69S	56S	43S	30S	16S	3S	10N	23N	37N	50N	62N
1256	12	1	F	34E	110	112524	77S	68S	55S	42S	29S	15S	2S	11N	24N	37N	51N	63N
1257	13	1	F	5E	110	132006	77S	68S	55S	42S	29S	15S	2S	10N	24N	37N	50N	63N
1258	1	1	F	23W	110	151430	78S	68S	56S	43S	30S	16S	3S	10N	23N	36N	49N	62N
1259	2	1	F	52W	110	170857	78S	69S	57S	44S	30S	17S	3S	9N	23N	36N	49N	61N
1260	3	1	F	81W	110	190327	78S	69S	57S	44S	31S	17S	4S	9N	22N	35N	48N	61N
1261	4	1	F	109W	110	205800	78S	70S	57S	44S	31S	17S	4S	8N	22N	35N	48N	61N
1262	5	1	F	138W	110	225235	78S	70S	57S	44S	31S	18S	4S	8N	22N	35N	48N	61N
1263	6	1	F	167W	111	004710	78S	70S	58S	45S	31S	18S	4S	8N	22N	35N	48N	61N
1264	7	1	W	165E	111	024151	78S	70S	58S	44S	31S	18S	4S	8N	22N	35N	48N	61N
1265	8	1	W	136E	111	043634	78S	70S	57S	44S	31S	17S	4S	9N	22N	35N	48N	61N
1266	9	1	W	107E	111	063121	78S	69S	57S	44S	30S	17S	3S	9N	22N	36N	49N	61N
1267	10	1	F	79E	111	082610	78S	69S	56S	43S	30S	16S	3S	10N	23N	36N	49N	62N
1268	11	1	F	50E	111	102103	78S	68S	56S	43S	29S	16S	2S	10N	24N	37N	50N	63N
1269	12	1	F	21E	111	121544	77S	68S	56S	43S	29S	16S	2S	10N	23N	37N	50N	62N
1270	1	1	F	7W	111	141008	78S	69S	56S	43S	30S	17S	3S	9N	23N	36N	49N	62N
1271	2	1	F	36W	111	160435	78S	69S	57S	44S	31S	17S	4S	9N	22N	35N	48N	61N
1272	3	1	F	65W	111	175905	78S	70S	57S	44S	31S	18S	4S	8N	22N	35N	48N	61N
1273	4	1	F	93W	111	195337	78S	70S	58S	45S	31S	18S	4S	8N	21N	35N	48N	60N
1274	5	1	F	122W	111	214813	78S	70S	58S	45S	32S	18S	5S	8N	21N	35N	48N	60N
1275	6	1	F	151W	111	234248	78S	70S	58S	45S	32S	18S	5S	8N	21N	34N	47N	60N
1276	7	1	W	179W	112	013729	78S	70S	58S	45S	32S	18S	5S	8N	21N	35N	48N	60N
1277	8	1	W	152E	112	033214	78S	70S	58S	45S	31S	18S	4S	8N	22N	35N	48N	61N
1278	9	1	W	123E	112	052711	78S	69S	57S	44S	30S	17S	3S	9N	23N	36N	49N	62N
1279	10	1	W	95E	112	072151	78S	69S	57S	44S	30S	17S	3S	9N	23N	36N	49N	62N
1280	11	1	F	66E	112	091644	78S	68S	56S	43S	29S	16S	2S	10N	23N	37N	50N	62N
1281	12	1	F	37E	112	111141	77S	68S	55S	42S	28S	15S	1S	11N	24N	38N	51N	63N
1282	13	1	F	9E	112	130625	77S	67S	55S	42S	28S	15S	2S	11N	24N	37N	50N	63N
1283	1	1	F	20W	112	150048	77S	68S	56S	43S	29S	16S	2S	10N	23N	37N	50N	62N
1284	2	1	F	49W	112	165515	78S	69S	56S	43S	30S	16S	3S	9N	23N	36N	49N	62N
1285	3	1	F	77W	112	184945	78S	69S	57S	44S	30S	17S	3S	9N	22N	36N	49N	61N
1286	4	1	F	106W	112	204418	78S	69S	57S	44S	31S	17S	4S	9N	22N	35N	49N	61N
1287	5	1	F	135W	112	223854	78S	69S	57S	44S	31S	17S	4S	9N	22N	35N	48N	61N
1288	6	1	F	163W	113	003329	78S	70S	57S	44S	31S	17S	4S	9N	22N	35N	48N	61N
1289	7	1	W	168E	113	022811	78S	69S	57S	44S	31S	17S	4S	9N	22N	35N	48N	61N
1290	8	1	W	139E	113	042255	78S	69S	57S	44S	30S	17S	3S	9N	22N	36N	49N	61N
1291	9	1	W	111E	113	061743	78S	69S	56S	43S	30S	16S	3S	10N	23N	36N	49N	62N
1292	10	1	W	82E	113	081233	78S	68S	56S	43S	29S	16S	2S	10N	24N	37N	50N	63N
1293	11	1	F	53E	113	100727	77S	68S	55S	42S	28S	15S	1S	11N	24N	38N	51N	63N

PASS	TRACK	C	S	ALON	MODA	HRMNSE	SUB-SATELLITE POINT PICTURE LOCATION											
							LAT	LAT	LAT	LAT	LAT	LAT	LAT	LAT	LAT	LAT	LAT	LAT
1294	12	1	F	25E	113	120209	77S	67S	55S	42S	29S	15S	2S	11N	24N	37N	50N	63N
1295	1	1	F	4W	113	135633	78S	68S	56S	43S	29S	16S	2S	10N	23N	37N	50N	62N
1296	2	1	F	33W	113	155100	78S	69S	56S	43S	30S	16S	3S	9N	23N	36N	49N	62N
1297	3	1	F	61W	113	174529	78S	69S	57S	44S	30S	17S	3S	9N	22N	36N	49N	61N
1298	4	1	F	90W	113	194002	78S	69S	57S	44S	31S	17S	4S	9N	22N	35N	48N	61N
1299	5	1	F	119W	113	213438	78S	69S	57S	44S	31S	17S	4S	9N	22N	35N	48N	61N
1300	6	1	F	147W	113	232910	78S	70S	58S	44S	31S	18S	4S	8N	22N	35N	48N	61N
1301	7	1	W	176W	114	012350	78S	70S	57S	44S	31S	18S	4S	8N	22N	35N	48N	61N
1302	8	1	W	155E	114	031834	78S	69S	57S	44S	31S	17S	4S	9N	22N	35N	48N	61N
1303	9	1	W	127E	114	051321	78S	69S	57S	44S	30S	17S	3S	9N	23N	36N	49N	62N
1304	10	1	W	98E	114	070810	78S	69S	56S	43S	30S	16S	3S	10N	23N	36N	49N	62N
1305	11	1	F	69E	114	090303	77S	68S	56S	42S	29S	16S	2S	10N	24N	37N	50N	63N
1306	12	1	F	41E	114	105759	77S	67S	55S	41S	28S	15S	1S	11N	25N	38N	51N	64N
1307	13	1	F	12E	114	125240	77S	67S	55S	42S	28S	15S	1S	11N	24N	38N	51N	63N
1308	1	1	F	17W	114	144704	77S	68S	55S	42S	29S	16S	2S	10N	24N	37N	50N	62N
1309	2	1	F	45W	114	164131	78S	68S	56S	43S	30S	16S	3S	10N	23N	36N	49N	62N
1310	3	1	F	74W	114	183601	78S	69S	56S	43S	30S	17S	3S	9N	23N	36N	49N	62N
1311	4	1	F	103W	114	203034	78S	69S	57S	44S	30S	17S	3S	9N	22N	36N	49N	61N
1312	5	1	F	131W	114	222510	78S	69S	57S	44S	30S	17S	4S	9N	22N	36N	49N	61N
1313	6	1	F	160W	115	001947	78S	69S	57S	44S	30S	17S	4S	9N	22N	35N	49N	61N
1314	7	1	W	171E	115	021428	78S	69S	57S	44S	30S	17S	3S	9N	22N	36N	49N	61N
1315	8	1	W	143E	115	040913	78S	69S	56S	43S	30S	17S	3S	9N	23N	36N	49N	62N
1316	9	1	W	114E	115	060400	78S	68S	56S	43S	30S	16S	3S	10N	23N	36N	50N	62N
1317	10	1	W	85E	115	075850	77S	68S	55S	42S	29S	16S	2S	10N	24N	37N	50N	63N
1318	11	1	F	57E	115	095344	77S	67S	55S	42S	28S	15S	1S	11N	25N	38N	51N	63N
1319	12	1	F	28E	115	114824	77S	67S	55S	42S	28S	15S	2S	11N	24N	37N	50N	63N
1320	1	1	F	1W	115	134248	77S	68S	56S	42S	29S	16S	2S	10N	24N	37N	50N	62N
1321	2	1	F	29W	115	153715	78S	68S	56S	43S	30S	16S	3S	10N	23N	36N	49N	62N
1322	3	1	F	58W	115	173145	78S	69S	57S	43S	30S	17S	3S	9N	23N	36N	49N	61N
1323	4	1	F	87W	115	192618	78S	69S	57S	44S	30S	17S	4S	9N	22N	36N	49N	61N
1324	5	1	F	115W	115	212054	78S	69S	57S	44S	31S	17S	4S	9N	22N	35N	48N	61N
1325	6	1	F	144W	115	231533	78S	69S	57S	44S	30S	17S	4S	9N	22N	35N	49N	61N
1326	7	1	F	173W	116	011016	78S	69S	57S	44S	30S	17S	3S	9N	22N	36N	49N	61N
1327	8	1	W	159E	116	030501	78S	69S	56S	43S	30S	16S	3S	9N	23N	36N	49N	62N
1328	9	1	W	130E	116	045949	78S	68S	56S	43S	29S	16S	2S	10N	23N	37N	50N	62N
1329	10	1	W	101E	116	065440	77S	68S	55S	42S	29S	15S	2S	11N	24N	37N	50N	63N
1330	11	1	F	73E	116	084934	77S	67S	55S	41S	28S	14S	1S	11N	25N	38N	51N	64N
1331	12	1	F	44E	116	104432	76S	66S	54S	40S	27S	13S	0N	12N	26N	39N	52N	65N
1332	13	1	F	15E	116	123912	76S	66S	54S	40S	27S	14S	0N	12N	25N	39N	52N	64N
1333	1	1	F	13W	116	143336	77S	67S	54S	41S	28S	14S	1S	11N	25N	38N	51N	63N
1334	2	1	F	42W	116	162803	77S	67S	55S	42S	28S	15S	2S	11N	24N	37N	50N	63N
1335	3	1	F	71W	116	182234	77S	68S	55S	42S	29S	15S	2S	10N	24N	37N	50N	63N
1336	4	1	F	99W	116	201707	77S	68S	56S	42S	29S	16S	2S	10N	23N	37N	50N	62N
1337	5	1	F	128W	116	221143	78S	68S	56S	43S	29S	16S	2S	10N	23N	37N	50N	62N
1338	6	1	F	157W	117	00 621	78S	68S	56S	43S	29S	16S	2S	10N	23N	37N	50N	62N
1339	7	1	W	175E	117	020102	78S	68S	56S	43S	29S	16S	2S	10N	24N	37N	50N	62N
1340	8	1	W	146E	117	035546	77S	68S	55S	42S	29S	15S	2S	10N	24N	37N	50N	63N
1341	9	1	W	117E	117	055033	77S	67S	55S	42S	28S	15S	2S	11N	24N	38N	51N	63N
1342	10	1	W	89E	117	074523	77S	67S	54S	41S	28S	14S	1S	12N	25N	38N	51N	64N
1343	11	1	F	60E	117	094016	77S	66S	54S	40S	27S	14S	0N	12N	26N	39N	52N	64N
1344	12	1	F	31E	117	113513	76S	65S	53S	40S	26S	13S	0N	13N	27N	40N	53N	65N
1345	13	1	F	3E	117	132954	76S	65S	53S	40S	26S	13S	0N	13N	26N	39N	52N	65N
1346	1	1	F	26W	117	152418	76S	66S	53S	40S	27S	14S	0N	12N	26N	39N	52N	64N
1347	2	1	F	55W	117	171845	77S	67S	55S	41S	28S	15S	1S	12N	26N	39N	52N	64N
1348	3	1	F	84W	117	191315	78S	68S	55S	42S	29S	15S	2S	12N	25N	38N	51N	64N
1349	4	1	F	113W	117	210748	78S	68S	55S	42S	29S	15S	2S	11N	25N	38N	51N	64N
1350	5	1	F	141W	117	230224	78S	68S	55S	42S	29S	16S	2S	11N	25N	38N	51N	64N
1351	6	1	F	170W	118	005702	78S	68S	55S	42S	29S	16S	2S	11N	25N	38N	51N	64N
1352	7	1	W	161E	118	025144	78S	68S	55S	42S	29S	15S	2S	12N	25N	39N	52N	64N
1353	8	1	W	133E	118	044629	78S	68S	55S	42S	28S	16S	2S	12N	25N	39N	52N	64N
1354	9	1	W	104E	118	064116	77S	67S	55S	41S	28S	15S	1S	12N	26N	39N	52N	64N
1355	10	1	W	75E	118	083607	77S	67S	54S	41S	27S	14S	0	13N	26N	40N	53N	65N
1356	11	1	F	47E	118	103100	77S	66S	53S	40S	27S	13S	0	14N	27N	40N	53N	66N
1357	12	1	F	19E	118	122540	76S	65S	53S	40S	26S	13S	0N	13N	26N	39N	52N	65N
1358	1	1	F	10W	118	142004	76S	66S	53S	40S	27S	14S	0N	12N	25N	39N	52N	64N
1359	2	1	F	39W	118	161431	77S	67S	54S	41S	28S	14S	1S	12N	25N	38N	51N	64N
1360	3	1	F	67W	118	180901	77S	67S	54S	41S	28S	15S	1S	11N	25N	38N	51N	63N
1361	4	1	F	96W	118	200334	77S	67S	55S	42S	28S	15S	1S	11N	24N	37N	50N	63N
1362	5	1	F	125W	118	215810	77S	67S	55S	42S	28S	15S	2S	11N	24N	37N	50N	63N
1363	6	1	F	153W	118	235243	77S	68S	55S	42S	29S	15S	2S	11N	24N	37N	50N	63N
1364	7	1	W	178E	119	014723	77S	68S	55S	42S	29S	15S	2S	11N	24N	37N	50N	63N
1365	8	1	W	149E	119	034207	77S	67S	55S	42S	28S	15S	1S	11N	24N	38N	51N	63N
1366	9	1	W	121E	119	053654	77S	67S	54S	41S	28S	14S	1S	11N	25N	38N	51N	64N
1367	10	1	W	92E	119	073144	77S	66S	54S	41S	27S	14S	0N	12N	25N	39N	52N	64N
1368	11	1	F	63E	119	092636	76S	66S	53S	40S	27S	13S	0N	13N	26N	39N	52N	65N

PASS	TRACK	C	S	ALON	MODA	HRMNSE	SUB-SATELLITE POINT PICTURE LOCATION											
							LAT	LAT	LAT	LAT	LAT	LAT	LAT	LAT	LAT	LAT	LAT	LAT
1369	12	1	F	35E	119	112132	76S	65S	52S	39S	26S	12S	0N	14N	27N	40N	53N	66N
1370	13	1	F	6E	119	131613	76S	65S	52S	39S	26S	12S	0N	13N	27N	40N	53N	65N
1371	1	1	F	23W	119	151037	76S	66S	53S	40S	27S	13S	0N	13N	26N	39N	52N	64N
1372	2	1	F	51W	119	170504	76S	66S	54S	41S	27S	14S	0N	12N	25N	39N	51N	64N
1373	3	1	F	80W	119	185934	77S	67S	54S	41S	28S	14S	1S	12N	25N	38N	51N	64N
1374	4	1	F	109W	119	205407	77S	67S	54S	41S	28S	15S	1S	11N	25N	38N	51N	63N
1375	5	1	F	137W	119	224843	77S	67S	54S	41S	28S	15S	1S	11N	25N	38N	51N	63N
1376	6	1	F	166W	120	004322	77S	67S	54S	41S	28S	15S	1S	11N	25N	38N	51N	63N
1377	7	1	W	165E	120	023804	77S	67S	54S	41S	28S	14S	1S	11N	25N	38N	51N	64N
1378	8	1	W	137E	120	043249	77S	67S	54S	41S	27S	14S	1S	12N	25N	38N	51N	64N
1379	9	1	W	108E	120	062736	76S	66S	54S	40S	27S	14S	0N	12N	26N	39N	52N	64N
1380	10	1	W	79E	120	082227	76S	66S	53S	40S	26S	13S	0N	13N	26N	40N	52N	65N
1381	11	1	F	51E	120	101721	76S	65S	52S	39S	26S	12S	0N	14N	27N	40N	53N	66N
1382	12	1	F	22E	120	121200	76S	65S	52S	39S	26S	12S	0N	13N	27N	40N	53N	65N
1383	1	1	F	7W	120	140624	76S	66S	53S	40S	27S	13S	0N	13N	26N	39N	52N	64N
1384	2	1	F	35W	120	160051	76S	66S	54S	40S	27S	14S	0N	12N	25N	39N	51N	64N
1385	3	1	F	64W	120	175521	77S	67S	54S	41S	28S	14S	1S	12N	25N	38N	51N	64N
1386	4	1	F	93W	120	194954	77S	67S	54S	41S	28S	14S	1S	11N	25N	38N	51N	63N
1387	5	1	F	121W	120	214430	77S	67S	54S	41S	28S	15S	1S	11N	25N	38N	51N	63N
1388	6	1	F	150W	120	233908	77S	67S	54S	41S	28S	15S	1S	11N	25N	38N	51N	63N
1389	7	1	W	179W	121	013350	77S	67S	54S	41S	28S	14S	1S	11N	25N	38N	51N	64N
1390	8	1	W	153E	121	032834	77S	67S	54S	41S	28S	14S	1S	12N	25N	38N	51N	64N
1391	9	1	W	124E	121	052322	76S	66S	54S	40S	27S	14S	0N	12N	26N	39N	52N	64N
1392	10	1	W	95E	121	071813	76S	66S	53S	40S	26S	13S	0N	13N	26N	39N	52N	65N
1393	11	1	F	67E	121	091307	76S	65S	52S	39S	26S	12S	0N	14N	27N	40N	53N	66N
1394	12	1	F	38E	121	110803	75S	64S	51S	38S	25S	11S	1N	15N	28N	41N	54N	66N
1395	13	1	F	9E	121	130244	75S	64S	51S	38S	25S	11S	1N	14N	28N	41N	54N	66N
1396	1	1	F	19W	121	145709	75S	65S	52S	39S	26S	12S	0N	14N	27N	40N	53N	65N
1397	2	1	F	48W	121	165136	76S	65S	53S	39S	26S	13S	0N	13N	26N	39N	52N	65N
1398	3	1	F	77W	121	184606	76S	66S	53S	40S	27S	13S	0N	13N	26N	39N	52N	64N
1399	4	1	F	105W	121	204039	76S	66S	53S	40S	27S	13S	0N	12N	26N	39N	52N	64N
1400	5	1	F	134W	121	223515	76S	66S	53S	40S	27S	14S	0N	12N	26N	39N	52N	64N
1401	6	1	F	163W	122	002954	76S	66S	53S	40S	27S	14S	0N	12N	26N	39N	52N	64N
1402	7	1	W	169E	122	022436	76S	66S	53S	40S	27S	13S	0N	13N	26N	39N	52N	64N
1403	8	1	W	140E	122	041922	76S	66S	53S	40S	26S	13S	0N	13N	26N	39N	52N	65N
1404	9	1	W	111E	122	061411	76S	65S	52S	39S	26S	12S	0N	13N	27N	40N	53N	65N
1405	10	1	W	83E	122	080902	75S	64S	52S	39S	25S	12S	1N	14N	27N	41N	54N	66N
1406	11	1	F	54E	122	100357	75S	64S	51S	38S	24S	11S	2N	15N	28N	42N	54N	67N
1407	12	1	F	25E	122	115838	75S	64S	51S	38S	24S	11S	1N	15N	28N	41N	54N	66N
1408	1	1	F	3W	122	135302	75S	64S	52S	38S	25S	12S	1N	14N	27N	40N	53N	66N
1409	2	1	F	32W	122	154729	76S	65S	52S	39S	26S	12S	0N	13N	27N	40N	53N	65N
1410	3	1	F	61W	122	174159	76S	65S	53S	40S	26S	13S	0N	13N	26N	39N	52N	65N
1411	4	1	F	89W	122	193632	76S	66S	53S	40S	26S	13S	0N	13N	26N	39N	52N	65N
1412	5	1	F	118W	122	213108	76S	66S	53S	40S	27S	13S	0N	13N	26N	39N	52N	64N
1413	6	1	F	147W	122	232547	76S	66S	53S	40S	27S	13S	0N	13N	26N	39N	52N	65N
1414	7	1	F	175W	123	012029	76S	66S	53S	40S	26S	13S	0N	13N	26N	39N	52N	65N
1415	8	1	W	156E	123	031514	76S	65S	53S	39S	26S	13S	0N	13N	27N	40N	53N	65N
1416	9	1	W	127E	123	051002	76S	65S	52S	39S	26S	12S	0N	14N	27N	40N	53N	66N
1417	10	1	W	99E	123	070452	75S	64S	52S	38S	25S	12S	1N	14N	28N	41N	54N	66N
1418	11	1	F	70E	123	085946	75S	64S	51S	38S	24S	11S	2N	15N	28N	42N	55N	67N
1419	12	1	F	41E	123	105443	74S	63S	50S	37S	23S	10S	3N	16N	29N	43N	55N	68N
1420	13	1	F	13E	123	124923	74S	63S	50S	37S	23S	10S	2N	16N	29N	42N	55N	67N
1421	1	1	F	16W	123	144347	75S	63S	51S	37S	24S	11S	2N	15N	28N	41N	54N	66N
1422	2	1	F	45W	123	163814	75S	64S	51S	38S	25S	11S	1N	14N	28N	41N	54N	66N
1423	3	1	F	73W	123	183244	75S	64S	52S	38S	25S	12S	1N	14N	27N	40N	53N	66N
1424	4	1	F	102W	123	202717	75S	65S	52S	39S	25S	12S	0N	14N	27N	40N	53N	65N
1425	5	1	F	131W	123	222154	76S	65S	52S	39S	26S	12S	0N	14N	27N	40N	53N	65N
1426	6	1	F	159W	124	001626	76S	65S	52S	39S	26S	12S	0N	13N	27N	40N	53N	65N
1427	7	1	W	172E	124	021107	76S	65S	52S	39S	26S	12S	0N	13N	27N	40N	53N	65N
1428	8	1	W	143E	124	040551	75S	65S	52S	39S	25S	12S	0N	14N	27N	40N	53N	66N
1429	9	1	W	115E	124	060038	75S	64S	52S	38S	25S	12S	1N	14N	28N	41N	54N	66N
1430	10	1	F	86E	124	075528	75S	64S	51S	38S	24S	11S	1N	15N	28N	41N	54N	67N
1431	11	1	F	57E	124	095021	74S	63S	50S	37S	24S	10S	2N	16N	29N	42N	55N	67N
1432	12	1	F	29E	124	114459	74S	63S	50S	37S	24S	11S	2N	15N	28N	41N	54N	67N
1433	1	1	F	0W	124	133923	75S	64S	51S	38S	25S	11S	1N	14N	28N	41N	54N	66N
1434	2	1	F	29W	124	153350	75S	64S	52S	39S	25S	12S	0N	14N	27N	40N	53N	66N
1435	3	1	F	57W	124	172821	76S	65S	52S	39S	26S	12S	0N	13N	27N	40N	53N	65N
1436	4	1	F	86W	124	192254	76S	65S	52S	39S	26S	13S	0N	13N	26N	40N	53N	65N
1437	5	1	F	115W	124	211730	76S	65S	53S	39S	26S	13S	0N	13N	26N	40N	52N	65N
1438	6	1	F	143W	124	231209	76S	65S	52S	39S	26S	13S	0N	13N	26N	40N	53N	65N
1439	7	1	F	172W	125	010643	76S	65S	53S	40S	26S	13S	0N	13N	26N	39N	52N	65N
1440	8	1	W	159E	125	030127	76S	65S	52S	39S	26S	13S	0N	13N	27N	40N	53N	65N
1441	9	1	W	131E	125	045614	76S	65S	52S	39S	26S	12S	0N	14N	27N	40N	53N	65N
1442	10	1	W	102E	125	065104	75S	64S	51S	38S	25S	12S	1N	14N	28N	41N	54N	66N
1443	11	1	F	73E	125	084557	75S	64S	51S	38S	24S	11S	2N	15N	28N	42N	54N	67N

PASS	TRACK	C	S	ALON	MODA	HRMNSE	SUB-SATELLITE POINT PICTURE LOCATION											
							LAT	LAT	LAT	LAT	LAT	LAT	LAT	LAT	LAT	LAT	LAT	LAT
1444	12	1	F	45E	125	104052	74S	63S	50S	37S	23S	10S	3N	16N	29N	42N	55N	68N
1445	13	1	F	16E	125	123532	74S	63S	50S	37S	24S	10S	2N	16N	29N	42N	55N	67N
1446	1	1	F	13W	125	142956	75S	63S	51S	38S	24S	11S	1N	15N	28N	41N	54N	66N
1447	2	1	F	41W	125	162423	75S	64S	51S	38S	25S	11S	1N	14N	28N	41N	54N	66N
1448	3	1	W	70W	125	181853	75S	64S	52S	39S	25S	12S	0N	14N	27N	40N	53N	66N
1449	4	1	F	99W	125	201324	76S	65S	53S	40S	26S	13S	1N	14N	27N	40N	53N	66N
1450	5	1	F	127W	125	220759	76S	65S	52S	39S	26S	12S	0N	13N	27N	40N	53N	65N
1451	6	1	F	156W	126	00 237	76S	65S	52S	39S	26S	12S	0N	13N	27N	40N	53N	65N
1452	7	1	W	175E	126	015717	76S	65S	52S	39S	26S	12S	0N	13N	27N	40N	53N	65N
1453	8	1	W	147E	126	035201	76S	65S	52S	39S	26S	12S	0N	14N	27N	40N	53N	65N
1454	9	1	W	118E	126	054648	75S	64S	52S	38S	25S	12S	1N	14N	27N	41N	54N	66N
1455	10	1	W	89E	126	074138	75S	64S	51S	38S	24S	11S	1N	15N	28N	41N	54N	66N
1456	11	1	F	61E	126	093630	74S	63S	50S	37S	24S	10S	2N	15N	29N	42N	55N	67N
1457	12	1	F	32E	126	113126	74S	62S	49S	36S	23S	9S	3N	16N	30N	43N	56N	68N
1458	13	1	F	3E	126	132606	74S	62S	50S	36S	23S	10S	3N	16N	29N	42N	55N	67N
1459	1	1	F	25W	126	152030	74S	63S	50S	37S	24S	10S	2N	15N	28N	42N	54N	67N
1460	2	1	F	54W	126	171457	75S	64S	51S	38S	24S	11S	1N	15N	28N	41N	54N	66N
1461	3	1	F	83W	126	190927	75S	64S	51S	38S	25S	11S	1N	14N	28N	41N	54N	66N
1462	4	1	F	111W	126	210400	75S	64S	52S	38S	25S	12S	1N	14N	27N	40N	53N	66N
1463	5	1	F	140W	126	225836	75S	64S	52S	39S	25S	12S	1N	14N	27N	40N	53N	66N
1464	6	1	F	169W	127	005302	76S	65S	52S	39S	26S	13S	0N	13N	27N	40N	53N	65N
1465	7	1	W	163E	127	024741	76S	65S	52S	39S	26S	12S	0N	13N	27N	40N	53N	65N
1466	8	1	W	134E	127	044223	76S	65S	52S	39S	26S	12S	0N	13N	27N	40N	53N	65N
1467	9	1	W	105E	127	063709	75S	64S	52S	39S	25S	12S	1N	14N	27N	40N	53N	66N
1468	10	1	W	77E	127	083157	75S	64S	51S	38S	25S	11S	1N	14N	28N	41N	54N	66N
1469	11	1	F	48E	127	102649	75S	63S	51S	37S	24S	11S	2N	15N	28N	42N	54N	67N
1470	12	1	F	19E	127	122126	75S	64S	51S	38S	24S	11S	1N	15N	28N	41N	54N	66N
1471	1	1	F	9W	127	141550	75S	64S	52S	38S	25S	12S	1N	14N	27N	40N	53N	65N
1472	2	1	F	38W	127	161018	76S	65S	52S	39S	26S	12S	0N	13N	27N	40N	53N	65N
1473	3	1	F	67W	127	180448	76S	65S	53S	39S	26S	13S	0N	13N	26N	39N	52N	65N
1474	4	1	F	95W	127	195921	76S	65S	53S	40S	26S	13S	0N	13N	26N	39N	52N	64N
1475	5	1	F	124W	127	215357	76S	66S	53S	40S	27S	13S	0N	13N	26N	39N	52N	64N
1476	6	1	F	153W	127	234829	76S	66S	53S	40S	27S	13S	0N	12N	26N	39N	52N	64N
1477	7	1	F	178E	128	014310	77S	66S	54S	41S	27S	14S	1S	13N	26N	39N	52N	65N
1478	8	1	W	150E	128	033753	76S	66S	53S	40S	26S	13S	0N	13N	26N	39N	52N	65N
1479	9	1	W	121E	128	053240	76S	65S	53S	39S	26S	13S	0N	13N	26N	40N	53N	65N
1480	10	1	W	93E	128	072730	75S	65S	52S	39S	25S	12S	0N	14N	27N	40N	53N	66N
1481	11	1	F	64E	128	092222	75S	64S	51S	38S	25S	11S	1N	14N	28N	41N	54N	66N
1482	12	1	F	35E	128	111342	78S	73S	61S	48S	35S	22S	8S	4N	18N	31N	44N	57N
1483	13	1	F	7E	128	130820	78S	73S	61S	48S	35S	22S	9S	4N	17N	30N	43N	56N
1484	1	1	F	22W	128	150243	78S	73S	62S	49S	36S	23S	9S	3N	16N	30N	43N	55N
1485	2	1	F	51W	128	165710	78S	74S	63S	50S	37S	23S	10S	2N	16N	29N	42N	55N
1486	3	2	F	79W	128	185129	78S	75S	63S	51S	38S	24S	11S	1N	15N	28N	41N	54N
1487	4	1	F	108W	128	204600	78S	75S	64S	51S	38S	25S	11S	1N	14N	28N	41N	54N
1488	5	1	F	137W	128	224034	78S	75S	64S	51S	38S	25S	12S	1N	14N	27N	41N	53N
1489	6	1	F	165W	129	003511	78S	75S	64S	51S	38S	25S	12S	1N	14N	27N	41N	53N
1490	7	1	W	166E	129	022952	78S	75S	64S	51S	38S	25S	11S	1N	14N	28N	41N	54N
1491	8	1	W	137E	129	042435	78S	75S	64S	51S	38S	25S	11S	1N	15N	28N	41N	54N
1492	9	1	W	109E	129	061921	78S	75S	63S	51S	38S	24S	11S	2N	15N	28N	41N	54N
1493	10	1	W	80E	129	081800	75S	64S	52S	39S	25S	12S	1N	14N	27N	40N	53N	66N
1494	11	1	F	51E	129	101252	75S	64S	51S	38S	25S	11S	1N	15N	28N	41N	54N	66N
1495	12	1	F	23E	129	120730	75S	64S	51S	38S	25S	11S	1N	14N	27N	41N	53N	66N
1496	1	1	F	6W	129	140154	75S	65S	52S	39S	26S	12S	0N	13N	27N	40N	53N	65N
1497	2	1	F	35W	129	155621	76S	65S	53S	39S	26S	13S	0N	13N	26N	39N	52N	65N
1498	3	2	F	63W	129	175040	76S	66S	53S	40S	27S	14S	0N	12N	25N	38N	51N	64N
1499	4	2	F	92W	129	194511	77S	66S	54S	41S	28S	14S	1S	12N	25N	38N	51N	63N
1500	5	2	F	121W	129	213946	77S	67S	54S	41S	28S	14S	1S	11N	25N	38N	51N	63N
1501	6	2	F	149W	129	233423	77S	67S	54S	41S	28S	14S	1S	11N	25N	38N	51N	63N
1502	7	2	W	178W	130	012903	77S	67S	54S	41S	28S	14S	1S	11N	25N	38N	51N	63N
1503	8	2	W	153E	130	032346	77S	66S	54S	41S	27S	14S	1S	12N	25N	38N	51N	64N
1504	9	2	W	125E	130	051832	76S	66S	53S	40S	27S	14S	0N	12N	25N	39N	51N	64N
1505	10	2	W	96E	130	071321	76S	66S	53S	40S	27S	13S	0N	13N	26N	39N	52N	65N
1506	11	2	F	67E	130	090813	76S	65S	52S	39S	26S	12S	0N	13N	27N	40N	53N	65N
1507	12	2	F	39E	130	110307	75S	64S	52S	38S	25S	12S	1N	14N	27N	41N	54N	66N
1508	13	2	F	10E	130	125747	75S	64S	52S	39S	25S	12S	0N	14N	27N	40N	53N	65N
1509	1	2	F	19W	130	145211	76S	65S	52S	39S	26S	13S	0N	13N	26N	39N	52N	65N
1510	2	2	F	47W	130	164638	76S	65S	53S	40S	27S	13S	0N	12N	26N	39N	52N	64N
1511	3	2	F	76W	130	184108	76S	66S	53S	40S	27S	14S	0N	12N	25N	38N	51N	64N
1512	4	2	F	105W	130	203541	76S	66S	54S	41S	27S	14S	1S	12N	25N	38N	51N	64N
1513	5	2	F	133W	130	223016	77S	66S	54S	41S	27S	14S	1S	12N	25N	38N	51N	63N
1514	6	2	F	162W	131	002453	77S	66S	54S	41S	28S	14S	1S	12N	25N	38N	51N	63N
1515	7	2	W	169E	131	021933	77S	66S	54S	41S	27S	14S	1S	12N	25N	38N	51N	64N
1516	8	2	W	141E	131	041416	76S	66S	54S	41S	27S	14S	0N	12N	25N	38N	51N	64N
1517	9	2	W	112E	131	060902	76S	66S	53S	40S	27S	13S	0N	12N	26N	39N	52N	64N
1518	10	2	W	83E	131	080351	76S	65S	53S	40S	26S	13S	0N	13N	26N	39N	52N	65N

PASS	TRACK	C	S	ALON	MODA	HRMNSE	SUB-SATELLITE POINT PICTURE LOCATION											
							LAT	LAT	LAT	LAT	LAT	LAT	LAT	LAT	LAT	LAT	LAT	LAT
1519	11	2	F	55E	131	095843	76S	65S	52S	39S	26S	12S	0N	14N	27N	40N	53N	65N
1520	12	2	F	26E	131	115321	76S	65S	52S	39S	26S	13S	0N	13N	26N	39N	52N	65N
1521	1	2	F	3W	131	134745	76S	66S	53S	40S	27S	13S	0N	12N	26N	39N	52N	64N
1522	2	2	F	31W	131	154212	76S	66S	54S	40S	27S	14S	1S	12N	25N	38N	51N	64N
1523	3	2	F	60W	131	173642	77S	66S	54S	41S	28S	14S	1S	11N	25N	38N	51N	63N
1524	4	2	F	89W	131	193115	77S	67S	54S	41S	28S	15S	1S	11N	24N	38N	50N	63N
1525	5	2	F	117W	131	212551	77S	67S	54S	41S	28S	15S	1S	11N	24N	37N	50N	63N
1526	6	2	F	146W	131	232024	77S	67S	55S	42S	28S	15S	2S	11N	24N	37N	50N	63N
1527	7	2	F	175W	2 1	011504	77S	67S	55S	42S	28S	15S	2S	11N	24N	37N	50N	63N
1528	8	2	W	157E	2 1	030947	77S	67S	54S	41S	28S	15S	1S	11N	24N	38N	50N	63N
1529	9	2	W	128E	2 1	050433	77S	67S	54S	41S	28S	14S	1S	11N	25N	38N	51N	63N
1530	10	2	W	99E	2 1	065922	76S	66S	53S	40S	27S	14S	0N	12N	25N	38N	51N	64N
1531	11	2	F	71E	2 1	085413	76S	65S	53S	40S	26S	13S	0N	13N	26N	39N	52N	65N
1532	12	2	F	42E	2 1	104908	76S	65S	52S	39S	26S	12S	0N	14N	27N	40N	53N	65N
1533	13	2	F	13E	2 1	124347	76S	65S	52S	39S	26S	13S	0N	13N	26N	39N	52N	65N
1534	1	2	F	15W	2 1	143811	76S	65S	53S	40S	27S	13S	0N	12N	26N	39N	52N	64N
1535	2	2	F	44W	2 1	163238	76S	66S	53S	40S	27S	14S	1S	12N	25N	38N	51N	64N
1536	3	2	F	73W	2 1	182708	77S	66S	54S	41S	28S	14S	1S	11N	25N	38N	51N	63N
1537	4	2	F	101W	2 1	202141	77S	67S	54S	41S	28S	15S	1S	11N	24N	38N	50N	63N
1538	5	2	F	130W	2 1	221617	77S	67S	54S	41S	28S	15S	1S	11N	24N	37N	50N	63N
1539	6	2	F	159W	2 2	001054	77S	67S	54S	41S	28S	15S	1S	11N	24N	37N	50N	63N
1540	7	2	W	173E	2 2	020535	77S	67S	54S	41S	28S	15S	1S	11N	24N	38N	50N	63N
1541	8	2	W	144E	2 2	040018	77S	67S	54S	41S	28S	14S	1S	11N	25N	38N	51N	63N
1542	9	2	W	115E	2 2	055504	77S	66S	54S	41S	27S	14S	1S	12N	25N	38N	51N	64N
1543	10	2	W	87E	2 2	074953	76S	66S	53S	40S	27S	13S	0N	12N	26N	39N	52N	64N
1544	11	2	F	58E	2 2	094445	76S	65S	53S	39S	26S	13S	0N	13N	26N	39N	52N	65N
1545	12	2	F	29E	2 2	113925	76S	65S	53S	40S	26S	13S	0N	13N	26N	39N	52N	64N
1546	13	2	F	1E	2 2	133349	76S	66S	53S	40S	27S	14S	0N	12N	25N	38N	51N	64N
1547	1	2	F	28W	2 2	152815	77S	66S	54S	41S	28S	14S	1S	11N	25N	38N	51N	63N
1548	2	2	F	57W	2 2	172245	77S	67S	54S	41S	28S	15S	1S	11N	24N	37N	50N	63N
1549	3	2	F	85W	2 2	191718	77S	67S	55S	42S	28S	15S	2S	11N	24N	37N	50N	63N
1550	4	2	F	114W	2 2	211153	77S	67S	55S	42S	29S	15S	2S	10N	24N	37N	50N	62N
1551	5	2	F	143W	2 2	230632	77S	67S	55S	42S	29S	15S	2S	11N	24N	37N	50N	62N
1552	6	2	F	171W	2 3	010108	77S	67S	55S	42S	29S	15S	2S	10N	24N	37N	50N	62N
1553	7	2	W	160E	2 3	025551	77S	67S	55S	42S	28S	15S	2S	11N	24N	37N	50N	63N
1554	8	2	W	131E	2 3	045038	77S	67S	54S	41S	28S	15S	1S	11N	24N	38N	51N	63N
1555	9	2	W	103E	2 3	064527	77S	66S	54S	41S	27S	14S	1S	12N	25N	38N	51N	64N
1556	10	2	F	74E	2 3	084019	76S	66S	53S	40S	27S	13S	0N	12N	26N	39N	52N	64N
1557	11	2	F	45E	2 3	103514	76S	65S	52S	39S	26S	13S	0N	13N	27N	40N	53N	65N
1558	12	2	F	17E	2 3	122955	76S	65S	52S	39S	26S	13S	0N	13N	26N	39N	52N	65N
1559	1	2	F	12W	2 3	142419	76S	66S	53S	40S	27S	13S	0N	12N	25N	39N	51N	64N
1560	2	2	F	41W	2 3	161846	76S	66S	54S	41S	27S	14S	1S	12N	25N	38N	51N	63N
1561	3	2	F	69W	2 3	181315	77S	67S	54S	41S	28S	15S	1S	11N	24N	38N	50N	63N
1562	4	2	F	98W	2 3	200748	77S	67S	54S	41S	28S	15S	1S	11N	24N	37N	50N	63N
1563	5	2	F	127W	2 3	220224	77S	67S	55S	41S	28S	15S	2S	11N	24N	37N	50N	63N
1564	6	2	F	155W	2 3	235701	77S	67S	55S	42S	28S	15S	2S	11N	24N	37N	50N	63N
1565	7	2	W	176E	2 4	015141	77S	67S	55S	41S	28S	15S	2S	11N	24N	37N	50N	63N
1566	8	2	W	147E	2 4	034625	77S	67S	54S	41S	28S	15S	1S	11N	24N	38N	50N	63N
1567	9	2	W	119E	2 4	054111	77S	66S	54S	41S	28S	14S	1S	11N	25N	38N	51N	63N
1568	10	2	W	90E	2 4	073600	76S	66S	53S	40S	27S	14S	0N	12N	25N	38N	51N	64N
1569	11	2	F	61E	2 4	093052	76S	65S	53S	40S	26S	13S	0N	13N	26N	39N	52N	65N
1570	12	2	F	33E	2 4	112548	75S	65S	52S	39S	25S	12S	0N	14N	27N	40N	53N	65N
1571	13	2	F	4E	2 4	132027	75S	65S	52S	39S	26S	12S	0N	13N	26N	40N	52N	65N
1572	1	2	F	25W	2 4	151450	76S	65S	53S	40S	26S	13S	0N	12N	26N	39N	52N	64N
1573	2	2	F	53W	2 4	170920	76S	66S	53S	40S	27S	14S	0N	12N	25N	38N	51N	64N
1574	3	2	F	82W	2 4	190348	76S	66S	54S	41S	27S	14S	1S	12N	25N	38N	51N	63N
1575	4	2	F	111W	2 4	205820	77S	67S	54S	41S	28S	14S	1S	11N	24N	38N	51N	63N
1576	5	2	F	139W	2 4	225255	77S	67S	54S	41S	28S	15S	1S	11N	24N	37N	50N	63N
1577	6	2	F	168W	2 5	004732	77S	67S	54S	41S	28S	15S	1S	11N	24N	37N	50N	63N
1578	7	2	W	163E	2 5	024213	77S	67S	54S	41S	28S	15S	1S	11N	24N	38N	51N	63N
1579	8	2	W	135E	2 5	043657	77S	66S	54S	41S	28S	14S	1S	11N	25N	38N	51N	63N
1580	9	2	W	106E	2 5	063144	76S	66S	54S	40S	27S	14S	0N	12N	25N	38N	51N	64N
1581	10	2	W	77E	2 5	082633	76S	66S	53S	40S	27S	13S	0N	12N	26N	39N	52N	64N
1582	11	2	F	49E	2 5	102126	76S	65S	52S	39S	26S	13S	0N	13N	26N	40N	53N	65N
1583	12	2	F	20E	2 5	121606	76S	65S	52S	39S	26S	13S	0N	13N	26N	39N	52N	64N
1584	1	2	F	9W	2 5	141030	76S	66S	53S	40S	27S	14S	0N	12N	25N	38N	51N	64N
1585	2	2	F	37W	2 5	160457	76S	66S	54S	41S	27S	14S	1S	12N	25N	38N	51N	63N
1586	3	2	F	66W	2 5	175927	77S	67S	54S	41S	28S	15S	1S	11N	24N	37N	50N	63N
1587	4	2	F	95W	2 5	195400	77S	67S	54S	41S	28S	15S	1S	11N	24N	37N	50N	63N
1588	5	2	F	123W	2 5	214836	77S	67S	54S	41S	28S	15S	2S	11N	24N	37N	50N	63N
1589	6	2	F	152W	2 5	234310	77S	67S	55S	42S	28S	15S	2S	11N	24N	37N	50N	62N
1590	7	2	W	179E	2 6	013751	77S	67S	55S	42S	28S	15S	2S	11N	24N	37N	50N	63N
1591	8	2	W	151E	2 6	033235	77S	67S	54S	41S	28S	15S	1S	11N	24N	37N	50N	63N
1592	9	2	W	122E	2 6	052722	77S	66S	54S	41S	28S	14S	1S	11N	25N	38N	51N	63N
1593	10	2	W	93E	2 6	072213	76S	66S	53S	40S	27S	14S	0N	12N	25N	39N	51N	64N

PASS	TRACK	C	S	ALON	MODA	HRMNSE	SUB-SATELLITE POINT PICTURE LOCATION											
							LAT	LAT	LAT	LAT	LAT	LAT	LAT	LAT	LAT	LAT	LAT	LAT
1594	11	2	F	65E	2 6	091706	76S	65S	53S	39S	26S	13S	0N	13N	26N	39N	52N	65N
1595	12	2	F	36E	2 6	111202	75S	64S	52S	39S	25S	12S	0N	14N	27N	40N	53N	66N
1596	13	2	F	7E	2 6	130645	75S	64S	52S	39S	25S	12S	0N	14N	27N	40N	53N	65N
1597	1	2	F	21W	2 6	150109	76S	65S	52S	39S	26S	13S	0N	13N	26N	39N	52N	64N
1598	2	2	F	50W	2 6	165536	76S	65S	53S	40S	27S	13S	0N	12N	25N	39N	51N	64N
1599	3	2	F	79W	2 6	185006	76S	66S	53S	40S	27S	14S	0N	12N	25N	38N	51N	64N
1600	4	2	F	107W	2 6	204439	76S	66S	54S	41S	27S	14S	1S	12N	25N	38N	51N	63N
1601	5	2	F	136W	2 6	223915	77S	66S	54S	41S	28S	14S	1S	11N	25N	38N	51N	63N
1602	6	2	F	165W	2 7	003350	77S	66S	54S	41S	28S	14S	1S	11N	25N	38N	51N	63N
1603	7	2	W	167E	2 7	022831	77S	66S	54S	41S	28S	14S	1S	11N	25N	38N	51N	63N
1604	8	2	W	138E	2 7	042315	76S	66S	54S	41S	27S	14S	1S	12N	25N	38N	51N	64N
1605	9	2	W	109E	2 7	061802	76S	66S	53S	40S	27S	13S	0N	12N	25N	39N	52N	64N
1606	10	2	W	81E	2 7	081252	76S	65S	53S	39S	26S	13S	0N	13N	26N	39N	52N	65N
1607	11	2	F	52E	2 7	100746	75S	64S	52S	39S	25S	12S	0N	14N	27N	40N	53N	65N
1608	12	2	F	23E	2 7	120228	75S	64S	52S	39S	26S	12S	0N	13N	27N	40N	53N	65N
1609	1	2	F	5W	2 7	135651	76S	65S	53S	40S	26S	13S	0N	13N	26N	39N	52N	64N
1610	2	2	F	34W	2 7	155118	76S	66S	53S	40S	27S	14S	0N	12N	25N	38N	51N	64N
1611	3	2	F	63W	2 7	174548	76S	66S	54S	41S	27S	14S	1S	12N	25N	38N	51N	63N
1612	4	2	F	91W	2 7	194021	77S	66S	54S	41S	28S	14S	1S	11N	25N	38N	51N	63N
1613	5	2	F	120W	2 7	213457	77S	66S	54S	41S	28S	14S	1S	11N	24N	38N	51N	63N
1614	6	2	F	149W	2 7	232928	77S	67S	54S	41S	28S	15S	1S	11N	24N	37N	50N	63N
1615	7	2	W	177W	2 8	012409	77S	67S	54S	41S	28S	15S	1S	11N	24N	37N	50N	63N
1616	8	2	W	154E	2 8	031853	77S	66S	54S	41S	28S	14S	1S	11N	25N	38N	51N	63N
1617	9	2	W	125E	2 8	051340	76S	66S	54S	41S	27S	14S	1S	12N	25N	38N	51N	64N
1618	10	2	W	97E	2 8	070830	76S	66S	53S	40S	27S	13S	0N	12N	26N	39N	52N	64N
1619	11	2	F	68E	2 8	090322	76S	65S	52S	39S	26S	13S	0N	13N	26N	39N	52N	65N
1620	12	2	F	39E	2 8	105818	75S	64S	51S	38S	25S	12S	1N	14N	27N	40N	53N	66N
1621	13	2	F	11E	2 8	125258	75S	64S	52S	38S	25S	12S	0N	14N	27N	40N	53N	65N
1622	1	2	F	18W	2 8	144722	76S	65S	52S	39S	26S	13S	0N	13N	26N	39N	52N	64N
1623	2	2	F	47W	2 8	164149	76S	65S	53S	40S	27S	13S	0N	12N	25N	39N	52N	64N
1624	3	2	F	75W	2 8	183619	76S	66S	53S	40S	27S	14S	0N	12N	25N	38N	51N	64N
1625	4	2	F	104W	2 8	203053	76S	66S	53S	40S	27S	14S	1S	12N	25N	38N	51N	63N
1626	5	2	F	133W	2 8	222529	76S	66S	54S	41S	27S	14S	1S	12N	25N	38N	51N	63N
1627	6	2	F	161W	2 9	002004	77S	66S	54S	41S	28S	14S	1S	11N	25N	38N	51N	63N
1628	7	2	W	170E	2 9	021446	76S	66S	54S	41S	27S	14S	1S	12N	25N	38N	51N	63N
1629	8	2	W	141E	2 9	040930	76S	66S	53S	40S	27S	14S	0N	12N	25N	38N	51N	64N
1630	9	2	W	113E	2 9	060417	76S	66S	53S	40S	27S	13S	0N	12N	26N	39N	52N	64N
1631	10	2	W	84E	2 9	075907	76S	65S	52S	39S	26S	13S	0N	13N	26N	39N	52N	65N
1632	11	2	F	55E	2 9	095400	75S	64S	52S	39S	25S	12S	0N	14N	27N	40N	53N	65N
1633	12	2	F	27E	2 9	114839	75S	64S	52S	39S	26S	12S	0N	13N	26N	40N	52N	65N
1634	1	2	F	2W	2 9	134303	76S	65S	53S	40S	26S	13S	0N	13N	26N	39N	52N	64N
1635	2	2	F	31W	2 9	153730	76S	66S	53S	40S	27S	14S	0N	12N	25N	38N	51N	64N
1636	3	2	F	59W	2 9	173200	76S	66S	54S	41S	27S	14S	1S	12N	25N	38N	51N	63N
1637	4	2	F	88W	2 9	192633	76S	66S	54S	41S	28S	14S	1S	11N	25N	38N	51N	63N
1638	5	2	F	117W	2 9	212109	77S	66S	54S	41S	28S	14S	1S	11N	24N	38N	51N	63N
1639	6	2	F	145W	2 9	231549	77S	66S	54S	41S	28S	14S	1S	11N	25N	38N	51N	63N
1640	7	2	F	174W	210	011024	77S	67S	54S	41S	28S	15S	1S	11N	24N	38N	50N	63N
1641	8	2	W	157E	210	030508	77S	66S	54S	41S	28S	14S	1S	11N	25N	38N	51N	63N
1642	9	2	W	129E	210	045955	76S	66S	53S	40S	27S	14S	0N	12N	25N	38N	51N	64N
1643	10	2	W	100E	210	065445	76S	65S	53S	40S	27S	13S	0N	12N	26N	39N	52N	64N
1644	11	2	F	71E	210	084938	75S	65S	52S	39S	26S	12S	0N	13N	26N	40N	53N	65N
1645	12	2	F	43E	210	104434	75S	64S	51S	38S	25S	12S	1N	14N	27N	41N	53N	66N
1646	13	2	F	14E	210	123914	75S	64S	51S	38S	25S	12S	0N	14N	27N	40N	53N	65N
1647	1	2	F	15W	210	143338	75S	65S	52S	39S	26S	13S	0N	13N	26N	39N	52N	65N
1648	2	2	F	43W	210	162805	76S	65S	53S	40S	26S	13S	0N	12N	26N	39N	52N	64N
1649	3	2	F	72W	210	182235	76S	66S	53S	40S	27S	14S	0N	12N	25N	38N	51N	64N
1650	4	2	F	101W	210	201708	76S	66S	53S	40S	27S	14S	1S	12N	25N	38N	51N	64N
1651	5	2	F	129W	210	221144	76S	66S	53S	40S	27S	14S	1S	12N	25N	38N	51N	63N
1652	6	2	F	158W	211	00 620	76S	66S	54S	41S	27S	14S	1S	12N	25N	38N	51N	63N
1653	7	2	W	173E	211	020102	76S	66S	53S	40S	27S	14S	1S	12N	25N	38N	51N	64N
1654	8	2	W	145E	211	035546	76S	66S	53S	40S	27S	14S	0N	12N	25N	38N	51N	64N
1655	9	2	W	116E	211	055033	76S	65S	53S	40S	26S	13S	0N	13N	26N	39N	52N	64N
1656	10	2	W	87E	211	074523	76S	65S	52S	39S	26S	13S	0N	13N	26N	39N	52N	65N
1657	11	2	F	59E	211	094016	75S	64S	51S	38S	25S	12S	1N	14N	27N	40N	53N	66N
1658	12	2	F	30E	211	113512	74S	63S	51S	37S	24S	11S	1N	15N	28N	41N	54N	66N
1659	13	2	F	1E	211	132952	74S	63S	51S	38S	24S	11S	1N	14N	28N	41N	53N	66N
1660	1	2	F	27W	211	152416	75S	64S	51S	38S	25S	12S	0N	14N	27N	40N	53N	65N
1661	2	2	F	56W	211	171844	75S	64S	52S	39S	26S	12S	0N	13N	26N	39N	52N	65N
1662	3	2	F	85W	211	191314	76S	65S	52S	39S	26S	13S	0N	13N	26N	39N	52N	64N
1663	4	2	F	113W	211	210747	76S	65S	53S	40S	26S	13S	0N	12N	26N	39N	52N	64N
1664	5	2	F	142W	211	230223	76S	65S	53S	40S	27S	13S	0N	12N	26N	39N	52N	64N
1665	6	2	W	171W	212	005658	76S	65S	53S	40S	27S	13S	0N	12N	25N	39N	51N	64N
1666	7	2	W	161E	212	025140	76S	65S	53S	40S	27S	13S	0N	12N	26N	39N	52N	64N
1667	8	2	W	132E	212	044624	76S	65S	53S	39S	26S	13S	0N	13N	26N	39N	52N	64N
1668	9	2	W	103E	212	064111	75S	65S	52S	39S	26S	12S	0N	13N	26N	40N	52N	65N

PASS	TRACK	C	S	ALON	MODA	HRMNSC	SUB-SATELLITE POINT PICTURE LOCATION											
							LAT	LAT	LAT	LAT	LAT	LAT	LAT	LAT	LAT	LAT	LAT	LAT
1669	10	2	F	75E	212	083602	75S	64S	51S	38S	25S	12S	0N	14N	27N	40N	53N	66N
1670	11	2	F	46E	212	103055	75S	63S	51S	38S	24S	11S	1N	15N	28N	41N	54N	66N
1671	12	2	F	17E	212	122534	75S	64S	51S	38S	25S	11S	1N	14N	27N	40N	53N	66N
1672	1	2	F	11W	212	141958	75S	64S	52S	39S	25S	12S	0N	13N	27N	40N	53N	65N
1673	2	2	F	40W	212	161425	75S	65S	52S	39S	26S	13S	0N	13N	26N	39N	52N	64N
1674	3	2	F	69W	212	180855	76S	65S	53S	40S	26S	13S	0N	12N	26N	39N	52N	64N
1675	4	2	F	97W	212	200328	76S	65S	53S	40S	27S	13S	0N	12N	25N	39N	51N	64N
1676	5	2	F	126W	212	215805	76S	65S	53S	40S	27S	13S	0N	12N	25N	38N	51N	64N
1677	6	2	F	155W	212	235236	76S	66S	53S	40S	27S	14S	1S	12N	25N	38N	51N	64N
1678	7	2	F	177E	213	014717	76S	66S	53S	40S	27S	14S	0N	12N	25N	38N	51N	64N
1679	8	2	W	148E	213	034200	76S	66S	53S	40S	27S	13S	0N	12N	25N	39N	51N	64N
1680	9	2	W	119E	213	053647	76S	65S	53S	40S	26S	13S	0N	13N	26N	39N	52N	64N
1681	10	2	W	91E	213	073136	75S	65S	52S	39S	26S	13S	0N	13N	26N	40N	52N	65N
1682	11	2	F	62E	213	092629	75S	64S	51S	38S	25S	12S	1N	14N	27N	40N	53N	66N
1683	12	2	F	33E	213	112124	74S	63S	51S	37S	24S	11S	1N	15N	28N	41N	54N	66N
1684	13	2	F	5E	213	131604	74S	63S	51S	38S	24S	11S	1N	14N	28N	41N	53N	66N
1685	1	2	F	24W	213	151028	75S	64S	51S	38S	25S	12S	0N	14N	27N	40N	53N	65N
1686	2	2	F	53W	213	170455	75S	65S	52S	39S	26S	12S	0N	13N	26N	39N	52N	65N
1687	3	2	F	81W	213	185925	76S	65S	52S	39S	26S	13S	0N	13N	26N	39N	52N	64N
1688	4	2	F	110W	213	205358	76S	65S	53S	40S	26S	13S	0N	12N	26N	39N	52N	64N
1689	5	2	F	139W	213	224834	76S	65S	53S	40S	27S	13S	0N	12N	26N	39N	52N	64N
1690	6	2	F	167W	214	004307	76S	66S	53S	40S	27S	14S	0N	12N	25N	38N	51N	64N
1691	7	2	W	164E	214	023747	76S	66S	53S	40S	27S	14S	0N	12N	25N	38N	51N	64N
1692	8	2	W	135E	214	043231	76S	65S	53S	40S	26S	13S	0N	12N	26N	39N	52N	64N
1693	9	2	W	107E	214	062718	76S	65S	52S	39S	26S	13S	0N	13N	26N	39N	52N	65N
1694	10	2	F	78E	214	082207	75S	64S	52S	39S	26S	12S	0N	13N	27N	40N	53N	65N
1695	11	2	F	50E	214	101700	75S	64S	51S	38S	25S	11S	1N	14N	27N	41N	53N	66N
1696	12	2	F	21E	214	121139	75S	64S	51S	38S	25S	12S	0N	14N	27N	40N	53N	65N
1697	1	2	F	8W	214	140603	75S	64S	52S	39S	26S	12S	0N	13N	26N	39N	52N	65N
1698	2	2	F	36W	214	160030	76S	65S	53S	40S	26S	13S	0N	12N	26N	39N	52N	64N
1699	3	2	F	65W	214	175500	76S	65S	53S	40S	27S	13S	0N	12N	25N	38N	51N	64N
1700	4	2	F	94W	214	194933	76S	66S	53S	40S	27S	14S	0N	12N	25N	38N	51N	64N
1701	5	2	F	122W	214	214409	76S	66S	53S	40S	27S	14S	1S	12N	25N	38N	51N	64N
1702	6	2	F	151W	214	233841	76S	66S	54S	41S	27S	14S	1S	11N	25N	38N	51N	63N
1703	7	2	F	180W	215	013322	76S	66S	54S	41S	27S	14S	1S	11N	25N	38N	51N	63N
1704	8	2	W	152E	215	032806	76S	66S	53S	40S	27S	14S	0N	12N	25N	38N	51N	64N
1705	9	2	W	123E	215	052252	76S	65S	53S	40S	27S	13S	0N	12N	25N	39N	52N	64N
1706	10	2	W	94E	215	071742	76S	65S	52S	39S	26S	13S	0N	13N	26N	39N	52N	65N
1707	11	2	F	66E	215	091235	75S	64S	52S	39S	25S	12S	0N	14N	27N	40N	53N	65N
1708	12	2	F	37E	215	110730	75S	64S	51S	38S	25S	11S	1N	14N	28N	41N	54N	66N
1709	13	2	F	8E	215	130211	75S	63S	51S	38S	25S	11S	1N	14N	27N	40N	53N	66N
1710	1	2	F	20W	215	145635	75S	64S	52S	39S	25S	12S	0N	13N	27N	40N	53N	65N
1711	2	2	F	49W	215	165102	75S	65S	52S	39S	26S	13S	0N	13N	26N	39N	52N	64N
1712	3	2	F	78W	215	184532	76S	65S	53S	40S	26S	13S	0N	12N	26N	39N	52N	64N
1713	4	2	F	106W	215	204005	76S	65S	53S	40S	27S	13S	0N	12N	25N	38N	51N	64N
1714	5	2	F	135W	215	223441	76S	65S	53S	40S	27S	14S	0N	12N	25N	38N	51N	64N
1715	6	2	F	164W	216	002916	76S	66S	53S	40S	27S	14S	0N	12N	25N	38N	51N	64N
1716	7	2	W	168E	216	022356	76S	66S	53S	40S	27S	14S	0N	12N	25N	38N	51N	64N
1717	8	2	W	139E	216	041840	76S	65S	53S	40S	27S	13S	0N	12N	25N	39N	52N	64N
1718	9	2	W	110E	216	061326	76S	65S	52S	39S	26S	13S	0N	13N	26N	39N	52N	64N
1719	10	2	F	82E	216	080816	75S	65S	52S	39S	26S	12S	0N	13N	26N	40N	53N	65N
1720	11	2	F	53E	216	100308	75S	64S	51S	38S	25S	12S	1N	14N	27N	40N	53N	66N
1721	12	2	F	24E	216	115747	75S	64S	51S	38S	25S	12S	0N	14N	27N	40N	53N	65N
1722	1	2	F	4W	216	135211	75S	65S	52S	39S	26S	13S	0N	13N	26N	39N	52N	64N
1723	2	2	F	33W	216	154638	76S	65S	53S	40S	27S	13S	0N	12N	25N	39N	51N	64N
1724	3	2	F	62W	216	174108	76S	66S	53S	40S	27S	14S	0N	12N	25N	38N	51N	64N
1725	4	2	F	90W	216	193541	76S	66S	53S	40S	27S	14S	1S	12N	25N	38N	51N	63N
1726	5	2	F	119W	216	213017	76S	66S	54S	41S	27S	14S	1S	11N	25N	38N	51N	63N
1727	6	2	F	148W	216	232451	76S	66S	54S	41S	28S	14S	1S	11N	24N	38N	51N	63N
1728	7	2	F	176W	217	011932	76S	66S	54S	41S	27S	14S	1S	11N	25N	38N	51N	63N
1729	8	2	W	155E	217	031416	76S	66S	53S	40S	27S	14S	1S	12N	25N	38N	51N	64N
1730	9	2	W	126E	217	050903	76S	65S	53S	40S	27S	13S	0N	12N	25N	39N	51N	64N
1731	10	2	W	98E	217	070353	76S	65S	52S	39S	26S	13S	0N	13N	26N	39N	52N	65N
1732	11	2	F	69E	217	085846	75S	64S	52S	39S	25S	12S	0N	13N	27N	40N	53N	65N
1733	12	2	F	40E	217	105342	75S	63S	51S	38S	25S	11S	1N	14N	28N	41N	54N	66N
1734	13	2	F	12E	217	124822	75S	63S	51S	38S	25S	11S	1N	14N	27N	40N	53N	66N
1735	1	2	F	17W	217	144246	75S	64S	52S	39S	25S	12S	0N	13N	26N	40N	52N	65N
1736	2	2	F	46W	217	163713	75S	65S	52S	39S	26S	13S	0N	13N	26N	39N	52N	64N
1737	3	2	F	74W	217	183143	76S	65S	53S	40S	26S	13S	0N	12N	26N	39N	52N	64N
1738	4	2	F	103W	217	202610	76S	66S	53S	40S	27S	14S	1S	12N	25N	38N	51N	64N
1739	5	2	F	132W	217	222044	76S	66S	53S	40S	27S	14S	1S	11N	25N	38N	51N	63N
1740	6	2	F	160W	218	001522	76S	66S	53S	40S	27S	14S	1S	11N	25N	38N	51N	63N
1741	7	2	W	171E	218	021002	76S	66S	53S	40S	27S	14S	1S	12N	25N	38N	51N	63N
1742	8	2	W	142E	218	040445	76S	66S	53S	40S	27S	14S	0N	12N	25N	38N	51N	64N
1743	9	2	W	114E	218	055931	76S	65S	53S	40S	27S	13S	0N	12N	25N	39N	52N	64N

PASS	TRACK	C	S	ALON	MODA	HRMNSE	SUB-SATELLITE POINT PICTURE LOCATION											
							LAT	LAT	LAT	LAT	LAT	LAT	LAT	LAT	LAT	LAT	LAT	LAT
1744	10	2	W	85E	218	075421	76S	65S	52S	39S	26S	13S	ON	13N	26N	39N	52N	65N
1745	11	2	F	56E	218	094913	75S	64S	52S	39S	25S	12S	ON	14N	27N	40N	53N	65N
1746	12	2	F	28E	218	114352	75S	64S	52S	39S	26S	12S	ON	13N	26N	39N	52N	65N
1747	1	2	F	1W	218	133816	76S	65S	52S	39S	26S	13S	ON	12N	26N	39N	52N	64N
1748	2	2	F	30W	218	153243	76S	65S	53S	40S	27S	14S	ON	12N	25N	38N	51N	64N
1749	3	2	F	58W	218	172713	76S	66S	53S	40S	27S	14S	1S	11N	25N	38N	51N	63N
1750	4	2	F	87W	218	192146	76S	66S	54S	41S	28S	14S	1S	11N	24N	38N	50N	63N
1751	5	2	F	116W	218	211622	76S	66S	54S	41S	28S	14S	1S	11N	24N	37N	50N	63N
1752	6	2	F	144W	218	231101	76S	66S	54S	41S	28S	14S	1S	11N	24N	37N	50N	63N
1753	7	2	F	173W	219	010535	77S	66S	54S	41S	28S	15S	1S	11N	24N	37N	50N	63N
1754	8	2	W	158E	219	030018	76S	66S	54S	41S	28S	14S	1S	11N	24N	38N	51N	63N
1755	9	2	W	130E	219	045505	76S	66S	53S	40S	27S	14S	1S	12N	25N	38N	51N	64N
1756	10	2	W	101E	219	064954	76S	65S	53S	40S	27S	13S	ON	12N	25N	39N	52N	64N
1757	11	2	F	72E	219	084447	76S	65S	52S	39S	26S	13S	ON	13N	26N	39N	52N	65N
1758	12	2	F	44E	219	103942	75S	64S	51S	38S	25S	12S	ON	14N	27N	40N	53N	66N
1759	13	2	F	15E	219	123421	75S	64S	52S	39S	25S	12S	ON	13N	26N	40N	52N	65N
1760	1	2	F	14W	219	142846	75S	65S	52S	39S	26S	13S	ON	13N	26N	39N	52N	64N
1761	2	2	F	42W	219	162313	76S	65S	53S	40S	27S	13S	ON	12N	25N	38N	51N	64N
1762	3	2	F	71W	219	181743	76S	66S	53S	40S	27S	14S	1S	12N	25N	38N	51N	63N
1763	4	2	F	100W	219	201216	76S	66S	53S	41S	27S	14S	1S	11N	25N	38N	51N	63N
1764	5	2	F	128W	219	220652	76S	66S	54S	41S	27S	14S	1S	11N	25N	38N	51N	63N
1765	6	2	F	157W	220	00 125	77S	66S	54S	41S	28S	15S	1S	11N	24N	37N	50N	63N
1766	7	2	W	174E	220	015605	76S	66S	54S	41S	28S	14S	1S	11N	24N	38N	50N	63N
1767	8	2	W	146E	220	035049	76S	66S	54S	41S	27S	14S	1S	11N	25N	38N	51N	63N
1768	9	2	W	117E	220	054536	76S	66S	53S	40S	27S	14S	ON	12N	25N	38N	51N	64N
1769	10	2	W	88E	220	074026	76S	65S	53S	40S	26S	13S	ON	12N	26N	39N	52N	64N
1770	11	2	F	60E	220	093518	75S	64S	52S	39S	26S	12S	ON	13N	26N	40N	53N	65N
1771	12	2	F	31E	220	113014	75S	64S	51S	38S	25S	12S	1N	14N	27N	40N	53N	66N
1772	13	2	F	2E	220	132452	75S	64S	51S	38S	25S	12S	ON	14N	27N	40N	53N	65N
1773	1	2	F	26W	220	151917	75S	64S	52S	39S	26S	13S	ON	13N	26N	39N	52N	65N
1774	2	2	F	55W	220	171344	76S	65S	52S	40S	26S	13S	ON	12N	26N	39N	52N	64N
1775	3	2	F	84W	220	190814	76S	65S	53S	40S	27S	14S	ON	12N	25N	38N	51N	64N
1776	4	2	F	112W	220	210248	76S	66S	53S	40S	27S	14S	1S	12N	25N	38N	51N	64N
1777	5	2	F	141W	220	225724	76S	66S	53S	40S	27S	14S	1S	12N	25N	38N	51N	63N
1778	6	2	F	170W	221	005158	76S	66S	53S	41S	27S	14S	1S	11N	25N	38N	51N	63N
1779	7	2	W	162E	221	024638	76S	66S	53S	40S	27S	14S	1S	11N	25N	38N	51N	63N
1780	8	2	W	133E	221	044122	76S	66S	53S	40S	27S	14S	ON	12N	25N	38N	51N	64N
1781	9	2	W	104E	221	063608	76S	65S	53S	40S	27S	13S	ON	12N	25N	39N	52N	64N
1782	10	2	W	76E	221	083058	76S	65S	52S	39S	26S	13S	ON	13N	26N	39N	52N	65N
1783	11	2	F	47E	221	102550	75S	64S	52S	39S	25S	12S	ON	14N	27N	40N	53N	65N
1784	12	2	F	18E	221	122029	75S	64S	52S	39S	26S	12S	ON	13N	26N	39N	52N	65N
1785	1	2	F	10W	221	141453	76S	65S	52S	39S	26S	13S	ON	12N	26N	39N	52N	64N
1786	2	2	F	39W	221	160920	76S	65S	53S	40S	27S	14S	ON	12N	25N	38N	51N	64N
1787	3	2	F	68W	221	180350	76S	66S	53S	40S	27S	14S	1S	11N	25N	38N	51N	63N
1788	4	2	F	96W	221	195823	76S	66S	54S	41S	28S	14S	1S	11N	24N	37N	50N	63N
1789	5	2	F	125W	221	215259	76S	66S	54S	41S	28S	15S	1S	11N	24N	37N	50N	63N
1790	6	2	F	154W	221	234726	77S	67S	54S	41S	28S	15S	2S	10N	24N	37N	50N	62N
1791	7	2	W	178E	222	014206	77S	67S	54S	41S	28S	15S	2S	11N	24N	37N	50N	63N
1792	8	2	W	149E	222	033649	77S	67S	54S	41S	28S	15S	2S	11N	24N	37N	50N	63N
1793	9	2	W	120E	222	053135	76S	66S	54S	41S	28S	14S	1S	11N	24N	38N	51N	63N
1794	10	2	W	92E	222	072624	76S	66S	53S	40S	27S	14S	1S	12N	25N	38N	51N	64N
1795	11	2	F	63E	222	092116	76S	65S	53S	40S	26S	13S	ON	12N	26N	39N	52N	64N
1796	12	2	F	34E	222	111611	75S	64S	52S	39S	26S	12S	ON	13N	27N	40N	53N	65N
1797	13	2	F	6E	222	131051	75S	64S	52S	39S	26S	13S	ON	13N	26N	39N	52N	65N
1798	1	2	F	23W	222	150515	76S	65S	53S	40S	27S	13S	ON	12N	25N	38N	51N	64N
1799	2	2	F	52W	222	165943	76S	66S	53S	40S	27S	14S	1S	12N	25N	38N	51N	63N
1800	3	2	F	80W	222	185413	76S	66S	54S	41S	27S	14S	1S	11N	24N	38N	51N	63N
1801	4	2	F	109W	222	204846	76S	66S	54S	41S	28S	15S	1S	11N	24N	37N	50N	63N
1802	5	2	F	138W	222	224322	77S	66S	54S	41S	28S	15S	1S	11N	24N	37N	50N	63N
1803	6	2	F	166W	223	003752	77S	67S	54S	41S	28S	15S	2S	10N	24N	37N	50N	62N
1804	7	2	W	165E	223	023232	77S	67S	54S	41S	28S	15S	2S	11N	24N	37N	50N	63N
1805	8	2	W	136E	223	042715	77S	66S	54S	41S	28S	15S	1S	11N	24N	37N	50N	63N
1806	9	2	W	108E	223	062201	76S	66S	54S	41S	28S	14S	1S	11N	24N	38N	51N	63N
1807	10	1	W	79E	223	081623	77S	67S	55S	42S	28S	15S	2S	10N	24N	37N	50N	62N
1808	11	1	F	50E	223	101115	77S	66S	54S	41S	28S	15S	1S	11N	24N	38N	51N	63N
1809	12	1	F	22E	223	120553	77S	66S	54S	41S	28S	15S	2S	11N	24N	37N	50N	62N
1810	1	1	F	7W	223	140017	77S	67S	55S	42S	29S	16S	2S	10N	23N	36N	49N	62N
1811	2	1	F	36W	223	155445	77S	68S	55S	42S	29S	16S	3S	9N	23N	36N	49N	61N
1812	3	1	F	64W	223	174915	77S	68S	56S	43S	30S	17S	3S	9N	22N	35N	48N	61N
1813	4	1	F	93W	223	194335	78S	69S	57S	44S	31S	18S	4S	8N	21N	34N	47N	60N
1814	5	1	F	122W	223	213812	78S	69S	57S	44S	31S	18S	4S	8N	21N	34N	47N	60N
1815	6	1	F	150W	223	233249	78S	69S	57S	44S	31S	18S	4S	8N	21N	34N	47N	60N
1816	7	1	F	179W	224	012730	78S	69S	57S	44S	31S	17S	4S	8N	21N	34N	48N	60N
1817	8	1	W	152E	224	032214	78S	69S	56S	44S	30S	17S	4S	8N	22N	35N	48N	61N
1818	9	1	W	124E	224	051701	78S	68S	56S	43S	30S	17S	3S	9N	22N	35N	48N	61N

PASS	TRACK	L	S	ALON	MODA	HRMNSC	SUB-SATELLITE POINT PICTURE LOCATION											
							LAT	LAT	LAT	LAT	LAT	LAT	LAT	LAT	LAT	LAT	LAT	LAT
1819	10	1	W	95E	224	071151	77S	68S	55S	43S	29S	16S	3S	9N	23N	36N	49N	62N
1820	11	1	F	66E	224	090644	77S	67S	55S	42S	29S	15S	2S	10N	23N	37N	50N	62N
1821	12	1	F	38E	224	110140	76S	66S	54S	41S	28S	14S	1S	11N	24N	38N	51N	63N
1822	13	1	F	9E	224	125621	76S	66S	54S	41S	28S	15S	1S	11N	24N	37N	[illegible]	63N
1823	1	1	F	20W	224	145045	77S	67S	55S	42S	29S	15S	2S	10N	23N	36N	49N	62N
1824	2	1	F	48W	224	164512	77S	67S	55S	42S	29S	16S	3S	9N	23N	36N	49N	61N
1825	3	1	F	77W	224	183942	77S	68S	56S	43S	30S	16S	3S	9N	22N	35N	48N	61N
1826	4	1	F	106W	224	203416	77S	68S	56S	43S	30S	17S	3S	9N	22N	35N	48N	61N
1827	5	1	F	134W	224	222852	77S	68S	56S	43S	30S	17S	4S	9N	22N	35N	48N	61N
1828	6	1	F	163W	225	002321	78S	69S	56S	44S	30S	17S	4S	8N	21N	35N	48N	60N
1829	7	1	W	168E	225	021802	78S	69S	56S	43S	30S	17S	4S	8N	22N	35N	48N	61N
1830	8	1	W	140E	225	041246	78S	68S	56S	43S	30S	17S	4S	9N	22N	35N	48N	61N
1831	9	1	W	111E	225	060733	77S	68S	56S	43S	30S	16S	3S	9N	22N	36N	49N	61N
1832	10	1	W	82E	225	080223	77S	67S	55S	42S	29S	16S	3S	10N	23N	36N	49N	62N
1833	11	1	F	54E	225	095715	77S	67S	54S	42S	28S	15S	2S	10N	24N	37N	50N	63N
1834	12	1	F	25E	225	115154	77S	67S	55S	42S	29S	15S	2S	10N	23N	36N	49N	62N
1835	1	1	F	4W	225	134618	77S	68S	55S	42S	29S	16S	3S	9N	23N	36N	49N	61N
1836	2	1	F	32W	225	154046	77S	68S	56S	43S	30S	17S	3S	9N	22N	35N	48N	61N
1837	3	1	F	61W	225	173516	78S	68S	56S	43S	30S	17S	4S	8N	22N	35N	48N	60N
1838	4	1	F	90W	225	192941	78S	69S	57S	44S	31S	18S	5S	8N	21N	34N	47N	60N
1839	5	1	F	118W	225	212415	78S	69S	57S	44S	31S	18S	5S	7N	21N	34N	47N	60N
1840	6	1	F	147W	225	231853	78S	69S	57S	44S	31S	18S	5S	7N	21N	34N	47N	60N
1841	7	1	F	176W	226	011333	78S	69S	57S	44S	31S	18S	5S	8N	21N	34N	47N	60N
1842	8	1	W	156E	226	030817	78S	69S	57S	44S	31S	18S	4S	8N	21N	34N	47N	60N
1843	9	1	W	127E	226	050303	78S	69S	56S	44S	30S	17S	4S	8N	22N	35N	48N	61N
1844	10	1	W	98E	226	065753	77S	68S	56S	43S	30S	17S	3S	9N	22N	35N	48N	61N
1845	11	1	W	70E	226	085246	77S	68S	55S	42S	29S	16S	3S	10N	23N	36N	49N	62N
1846	12	1	W	41E	226	104729	77S	67S	55S	42S	29S	16S	3S	9N	23N	36N	49N	61N
1847	13	1	W	12E	226	124152	77S	68S	56S	43S	30S	17S	4S	9N	22N	35N	48N	61N
1848	1	1	W	16W	226	143619	78S	69S	56S	44S	31S	17S	4S	8N	21N	34N	48N	60N
1849	2	1	W	45W	226	163049	78S	69S	57S	44S	31S	18S	5S	8N	21N	34N	47N	60N
1850	3	1	W	74W	226	182522	78S	69S	57S	44S	31S	18S	5S	7N	21N	34N	47N	60N
1851	BAD DATA CAMERA TRIGGERED ON MOON HORIZON																	
1852	BAD DATA CAMERA TRIGGERED ON MOON HORIZON																	
1853	6	1	F	160W	227	00 910	78S	70S	58S	45S	32S	18S	5S	7N	20N	34N	47N	59N
1854	7	1	W	172E	227	020354	78S	69S	57S	44S	31S	18S	5S	7N	21N	34N	47N	60N
1855	8	1	W	143E	227	035842	78S	69S	57S	44S	31S	18S	4S	8N	21N	34N	47N	60N
1856	9	1	W	114E	227	055332	78S	68S	56S	43S	30S	17S	4S	8N	22N	35N	48N	61N
1857	10	1	W	86E	227	074826	77S	68S	56S	43S	30S	16S	3S	9N	23N	36N	49N	62N
1858	11	1	F	57E	227	094322	77S	67S	55S	42S	29S	15S	2S	10N	23N	37N	50N	62N
1859	12	1	F	28E	227	113806	77S	67S	55S	42S	29S	15S	2S	10N	23N	36N	49N	62N
1860	1	1	F	0W	227	133230	77S	68S	55S	42S	29S	16S	3S	9N	23N	36N	49N	61N
1861	2	1	F	29W	227	152657	77S	68S	56S	43S	30S	17S	4S	9N	22N	35N	48N	61N
1862	3	1	F	58W	227	172116	78S	69S	57S	44S	31S	18S	5S	8N	21N	34N	47N	60N
1863	4	1	F	86W	227	191548	78S	69S	57S	44S	31S	18S	5S	7N	21N	34N	47N	60N
1864	5	1	F	115W	227	211023	78S	69S	57S	44S	31S	18S	5S	7N	21N	34N	47N	59N
1865	6	1	F	144W	227	230501	78S	69S	57S	45S	31S	18S	5S	7N	21N	34N	47N	60N
1866	7	1	F	172W	228	005942	78S	69S	57S	44S	31S	18S	5S	7N	21N	34N	47N	60N
1867	8	1	W	159E	228	025426	78S	69S	57S	44S	31S	18S	5S	8N	21N	34N	47N	60N
1868	9	1	W	130E	228	044913	78S	69S	57S	44S	31S	17S	4S	8N	21N	35N	48N	60N
1869	10	1	W	102E	228	064403	78S	68S	56S	43S	30S	17S	4S	9N	22N	35N	48N	61N
1870	11	1	F	73E	228	084103	73S	62S	49S	36S	23S	10S	3N	16N	29N	42N	55N	68N
1871	12	1	F	44E	228	103559	73S	61S	48S	35S	22S	9S	4N	17N	30N	43N	56N	68N
1872	13	1	F	16E	228	123041	72S	61S	48S	35S	22S	9S	3N	17N	30N	43N	56N	68N
1873	1	1	F	13W	228	142504	73S	62S	49S	36S	23S	10S	3N	16N	29N	42N	55N	67N
1874	2	1	F	42W	228	161930	73S	62S	50S	37S	23S	10S	2N	15N	28N	41N	54N	67N
1875	3	1	F	70W	228	181359	74S	63S	50S	37S	24S	11S	1N	15N	28N	41N	54N	66N
1876	4	1	F	99W	228	200831	74S	63S	50S	37S	24S	11S	1N	14N	28N	41N	54N	66N
1877	5	1	F	128W	228	220306	74S	63S	51S	38S	24S	11S	1N	14N	27N	41N	54N	66N
1878	6	1	F	156W	228	235739	74S	63S	51S	38S	25S	12S	1N	14N	27N	40N	53N	66N
1879	7	1	W	175E	3 1	015220	74S	63S	51S	38S	25S	11S	1N	14N	27N	41N	53N	66N
1880	8	1	W	146E	3 1	034704	74S	63S	50S	37S	24S	11S	1N	14N	28N	41N	54N	66N
1881	9	1	W	118E	3 1	054152	74S	63S	50S	37S	24S	11S	2N	15N	28N	41N	54N	67N
1882	10	1	W	89E	3 1	073642	73S	62S	49S	36S	23S	10S	2N	16N	29N	42N	55N	67N
1883	11	1	F	60E	3 1	093135	73S	61S	49S	36S	23S	9S	3N	16N	30N	43N	56N	68N
1884	12	1	F	32E	3 1	112631	72S	61S	48S	35S	22S	8S	4N	17N	30N	44N	57N	69N
1885	13	1	F	3E	3 1	132113	72S	61S	48S	35S	22S	9S	4N	17N	30N	43N	56N	68N
1886	1	1	F	26W	3 1	151536	73S	61S	49S	36S	23S	9S	3N	16N	29N	42N	55N	68N
1887	2	1	F	54W	3 1	171002	73S	62S	49S	36S	23S	10S	2N	16N	29N	42N	55N	67N
1888	3	1	F	83W	3 1	190431	74S	62S	50S	37S	24S	10S	2N	15N	28N	41N	54N	67N
1889	4	1	F	112W	3 1	205903	74S	63S	50S	37S	24S	11S	2N	15N	28N	41N	54N	66N
1890	5	1	F	140W	3 1	225338	74S	63S	50S	37S	24S	11S	1N	15N	28N	41N	54N	66N
1891	6	1	F	169W	3 2	004815	74S	63S	50S	37S	24S	11S	1N	15N	28N	41N	54N	66N
1892	7	1	W	162E	3 2	024257	74S	63S	50S	37S	24S	11S	1N	15N	28N	41N	54N	66N
1893	8	1	W	134E	3 2	043741	74S	63S	50S	37S	24S	10S	2N	15N	28N	41N	54N	67N

PASS	TRACK	C	S	ALON	MODA	HRMNSE	SUB-SATELLITE POINT PICTURE LOCATION											
							LAT	LAT	LAT	LAT	LAT	LAT	LAT	LAT	LAT	LAT	LAT	LAT
1894	9	1	W	105E	3 2	063229	73S	62S	49S	36S	23S	10S	2N	16N	29N	42N	55N	67N
1895	10	1	W	76E	3 2	082719	73S	62S	49S	36S	23S	9S	3N	16N	29N	43N	55N	68N
1896	11	1	F	48E	3 2	102213	72S	61S	48S	35S	22S	9S	4N	17N	30N	43N	56N	68N
1897	12	1	F	19E	3 2	121653	72S	61S	48S	35S	22S	9S	3N	17N	30N	43N	56N	68N
1898	1	1	F	10W	3 2	141114	73S	62S	49S	36S	23S	10S	2N	16N	29N	42N	55N	67N
1899	2	1	F	38W	3 2	160538	74S	62S	50S	37S	24S	11S	2N	15N	28N	41N	54N	66N
1900	3	1	F	67W	3 2	180005	74S	63S	50S	37S	24S	11S	1N	14N	28N	41N	54N	66N
1901	4	1	F	96W	3 2	195434	74S	63S	51S	38S	25S	12S	1N	14N	27N	40N	53N	66N
1902	5	1	F	124W	3 2	214907	75S	64S	51S	38S	25S	12S	0N	14N	27N	40N	53N	65N
1903	6	1	F	153W	3 2	234355	74S	63S	51S	38S	25S	11S	1N	14N	27N	41N	54N	66N
1904	7	1	F	178E	3 3	013837	74S	63S	50S	38S	24S	11S	1N	14N	28N	41N	54N	66N
1905	8	1	W	150E	3 3	033321	74S	63S	50S	37S	24S	11S	1N	15N	28N	41N	54N	66N
1906	9	1	W	121E	3 3	052808	74S	62S	50S	37S	24S	10S	2N	15N	28N	42N	54N	67N
1907	10	1	W	92E	3 3	072258	73S	62S	49S	36S	23S	10S	2N	16N	29N	42N	55N	67N
1908	11	1	F	64E	3 3	091751	73S	61S	49S	36S	22S	9S	3N	17N	30N	43N	56N	68N
1909	12	1	F	35E	3 3	111248	72S	60S	48S	35S	21S	8S	4N	17N	31N	44N	57N	69N
1910	13	1	F	6E	3 3	130729	72S	60S	48S	35S	22S	8S	4N	17N	30N	43N	56N	68N
1911	1	1	F	22W	3 3	150149	73S	61S	49S	36S	23S	9S	3N	16N	29N	42N	55N	68N
1912	2	1	F	51W	3 3	165613	73S	62S	49S	36S	23S	10S	2N	15N	29N	42N	55N	67N
1913	3	1	F	80W	3 3	185040	74S	62S	50S	37S	24S	11S	2N	15N	28N	41N	54N	66N
1914	4	1	F	108W	3 3	204510	74S	63S	50S	37S	24S	11S	1N	14N	28N	41N	54N	66N
1915	5	1	F	137W	3 3	223943	74S	63S	51S	38S	25S	11S	1N	14N	27N	41N	53N	66N
1916	6	1	F	166W	3 4	003428	74S	63S	50S	37S	24S	11S	1N	15N	28N	41N	54N	66N
1917	7	1	W	166E	3 4	022909	74S	63S	50S	37S	24S	11S	1N	15N	28N	41N	54N	66N
1918	8	1	W	137E	3 4	042352	74S	63S	50S	37S	24S	11S	2N	15N	28N	41N	54N	67N
1919	9	1	W	108E	3 4	061839	73S	62S	50S	37S	23S	10S	2N	15N	29N	42N	55N	67N
1920	10	1	W	80E	3 4	081329	73S	62S	49S	36S	23S	10S	3N	16N	29N	42N	55N	68N
1921	11	1	F	51E	3 4	100822	73S	61S	48S	35S	22S	9S	3N	17N	30N	43N	56N	68N
1922	12	1	F	22E	3 4	120300	73S	61S	48S	35S	22S	9S	3N	16N	30N	43N	55N	68N
1923	1	1	F	6W	3 4	135724	73S	62S	49S	36S	23S	10S	2N	16N	29N	42N	55N	67N
1924	2	1	F	35W	3 4	155151	74S	62S	50S	37S	24S	10S	2N	15N	28N	41N	54N	67N
1925	3	1	F	64W	3 4	174621	74S	63S	50S	37S	24S	11S	1N	15N	28N	41N	54N	66N
1926	4	1	F	92W	3 4	194054	74S	63S	50S	37S	24S	11S	1N	14N	28N	41N	54N	66N
1927	5	1	F	121W	3 4	213530	74S	63S	51S	38S	24S	11S	1N	14N	27N	41N	54N	66N
1928	6	1	F	150W	3 4	232958	75S	64S	51S	38S	25S	12S	0N	14N	27N	40N	53N	66N
1929	7	1	W	178W	3 5	012439	75S	64S	51S	38S	25S	12S	1N	14N	27N	40N	53N	66N
1930	8	1	W	153E	3 5	031923	74S	63S	51S	38S	25S	11S	1N	14N	27N	41N	54N	66N
1931	9	1	W	124E	3 5	051409	74S	63S	50S	37S	24S	11S	1N	15N	28N	41N	54N	66N
1932	10	1	W	96E	3 5	070859	74S	62S	50S	37S	24S	10S	2N	15N	28N	42N	55N	67N
1933	11	1	F	67E	3 5	090352	73S	62S	49S	36S	23S	10S	3N	16N	29N	42N	55N	68N
1934	12	1	F	38E	3 5	105848	73S	61S	48S	35S	22S	9S	4N	17N	30N	43N	56N	68N
1935	13	1	F	10E	3 5	125327	73S	61S	48S	35S	22S	9S	3N	16N	30N	43N	56N	68N
1936	1	1	F	19W	3 5	144752	73S	62S	49S	36S	23S	10S	2N	16N	29N	42N	55N	67N
1937	2	1	F	48W	3 5	164219	73S	62S	50S	37S	24S	10S	2N	15N	28N	41N	54N	67N
1938	3	1	F	76W	3 5	183649	74S	63S	50S	37S	24S	11S	1N	15N	28N	41N	54N	66N
1939	4	1	F	105W	3 5	203123	74S	63S	50S	37S	24S	11S	1N	15N	28N	41N	54N	66N
1940	5	1	F	134W	3 5	222559	74S	63S	50S	37S	24S	11S	1N	14N	28N	41N	54N	66N
1941	6	1	F	162W	3 6	002030	74S	63S	51S	38S	25S	11S	1N	14N	27N	40N	53N	66N
1942	7	1	W	169E	3 6	021511	74S	63S	51S	38S	25S	11S	1N	14N	27N	41N	54N	66N
1943	8	1	W	140E	3 6	040955	74S	63S	50S	37S	24S	11S	1N	14N	28N	41N	54N	66N
1944	9	1	W	112E	3 6	060442	74S	63S	50S	37S	24S	11S	2N	15N	28N	41N	54N	67N
1945	10	1	F	83E	3 6	075932	73S	62S	49S	36S	23S	10S	2N	16N	29N	42N	55N	67N
1946	11	1	F	54E	3 6	095425	73S	61S	49S	36S	23S	9S	3N	16N	30N	43N	56N	68N
1947	12	1	F	26E	3 6	114905	73S	61S	49S	36S	23S	10S	3N	16N	29N	42N	55N	67N
1948	1	1	F	3W	3 6	134329	73S	62S	49S	37S	23S	10S	2N	15N	28N	42N	54N	67N
1949	2	1	F	32W	3 6	153756	74S	63S	50S	37S	24S	11S	1N	15N	28N	41N	54N	66N
1950	3	1	F	60W	3 6	173226	74S	63S	50S	38S	24S	11S	1N	14N	27N	41N	54N	66N
1951	4	1	F	89W	3 6	192659	74S	63S	51S	38S	25S	12S	1N	14N	27N	40N	53N	66N
1952	5	1	F	118W	3 6	212136	74S	63S	51S	38S	25S	12S	1N	14N	27N	40N	53N	66N
1953	6	1	F	146W	3 6	231615	74S	63S	51S	38S	25S	12S	1N	14N	27N	40N	53N	66N
1954	7	1	W	175W	3 7	011049	75S	64S	51S	38S	25S	12S	0N	14N	27N	40N	53N	66N
1955	8	1	W	156E	3 7	030533	74S	63S	51S	38S	25S	11S	1N	14N	27N	40N	53N	66N
1956	9	1	W	128E	3 7	050021	74S	63S	50S	37S	24S	11S	1N	15N	28N	41N	54N	66N
1957	10	1	W	99E	3 7	065511	74S	62S	50S	37S	24S	10S	2N	15N	28N	42N	55N	67N
1958	11	1	F	70E	3 7	085004	73S	62S	49S	36S	23S	10S	3N	16N	29N	42N	55N	68N
1959	12	1	F	42E	3 7	104500	72S	61S	48S	35S	22S	9S	4N	17N	30N	43N	56N	68N
1960	13	1	F	13E	3 7	123940	72S	61S	48S	35S	22S	9S	3N	16N	30N	43N	56N	68N
1961	1	1	F	16W	3 7	143404	73S	62S	49S	36S	23S	10S	2N	16N	29N	42N	55N	67N
1962	2	1	F	44W	3 7	162832	73S	62S	50S	37S	23S	10S	2N	15N	28N	42N	54N	67N
1963	3	1	F	73W	3 7	182302	74S	63S	50S	37S	24S	11S	2N	15N	28N	41N	54N	66N
1964	4	1	F	102W	3 7	201735	74S	63S	50S	37S	24S	11S	1N	15N	28N	41N	54N	66N
1965	5	1	F	130W	3 7	221212	74S	63S	50S	37S	24S	11S	1N	14N	28N	41N	54N	66N
1966	6	1	F	159W	3 8	00 642	74S	63S	51S	38S	25S	11S	1N	14N	27N	40N	53N	66N
1967	7	1	W	172E	3 8	020127	74S	63S	51S	38S	25S	11S	1N	14N	27N	41N	54N	66N
1968	8	1	W	144E	3 8	035607	74S	63S	50S	37S	24S	11S	1N	14N	28N	41N	54N	66N

PASS	TRACK	C	S	ALON	MODA	HRMNSC	SUB-SATELLITE POINT PICTURE LOCATION											
							LAT	LAT	LAT	LAT	LAT	LAT	LAT	LAT	LAT	LAT	LAT	LAT
1969	9	1	W	115E	3 8	055054	74S	63S	50S	37S	24S	11S	2N	15N	28N	41N	54N	67N
1970	10	1	W	86E	3 8	074544	73S	62S	49S	36S	23S	10S	2N	16N	29N	42N	55N	67N
1971	11	1	F	58E	3 8	094037	73S	61S	49S	36S	23S	9S	3N	16N	30N	43N	56N	68N
1972	12	1	F	29E	3 8	113533	72S	61S	48S	35S	22S	8S	4N	17N	30N	44N	57N	69N
1973	1	1	F	0W	3 8	133013	72S	61S	48S	35S	22S	9S	4N	17N	30N	43N	56N	68N
1974	2	1	F	28W	3 8	152438	73S	61S	49S	36S	23S	9S	3N	16N	29N	42N	55N	68N
1975	3	1	F	57W	3 8	171905	73S	62S	49S	36S	23S	10S	2N	16N	29N	42N	55N	67N
1976	4	1	F	86W	3 8	191335	73S	62S	50S	37S	24S	10S	2N	15N	28N	42N	54N	67N
1977	5	1	F	114W	3 8	210808	74S	62S	50S	37S	24S	11S	2N	15N	28N	41N	54N	67N
1978	6	1	F	143W	3 8	230245	74S	63S	50S	37S	24S	11S	2N	15N	28N	41N	54N	67N
1979	7	1	F	172W	3 9	005713	74S	63S	51S	38S	24S	11S	1N	14N	28N	41N	54N	66N
1980	8	1	W	160E	3 9	025153	74S	63S	50S	37S	24S	11S	1N	14N	28N	41N	54N	66N
1981	9	1	W	131E	3 9	044637	74S	63S	50S	37S	24S	11S	1N	15N	28N	41N	54N	67N
1982	10	1	W	102E	3 9	064123	74S	62S	50S	37S	24S	10S	2N	15N	28N	42N	54N	67N
1983	11	1	W	74E	3 9	083613	73S	62S	49S	36S	23S	10S	2N	16N	29N	42N	55N	67N
1984	12	1	F	45E	3 9	103106	73S	61S	49S	36S	22S	9S	3N	16N	30N	43N	56N	68N
1985	13	1	F	16E	3 9	122544	73S	61S	49S	36S	23S	9S	3N	16N	29N	42N	55N	68N
1986	1	1	F	12W	3 9	142008	73S	62S	49S	36S	23S	10S	2N	15N	28N	42N	55N	67N
1987	2	1	F	41W	3 9	161435	74S	63S	50S	37S	24S	11S	1N	15N	28N	41N	54N	66N
1988	3	1	F	70W	3 9	180906	74S	63S	50S	37S	24S	11S	1N	14N	28N	41N	54N	66N
1989	4	1	F	98W	3 9	200339	74S	63S	51S	38S	25S	11S	1N	14N	27N	40N	53N	66N
1990	5	1	F	127W	3 9	215816	74S	63S	51S	38S	25S	11S	1N	14N	27N	40N	53N	66N
1991	6	1	F	156W	3 9	235245	75S	64S	51S	38S	25S	12S	0N	14N	27N	40N	53N	65N
1992	7	1	W	176E	310	014725	75S	64S	51S	38S	25S	12S	0N	14N	27N	40N	53N	66N
1993	8	1	W	147E	310	034209	74S	63S	51S	38S	25S	12S	1N	14N	27N	40N	53N	66N
1994	9	1	W	118E	310	053656	74S	63S	50S	38S	24S	11S	1N	14N	28N	41N	54N	66N
1995	10	1	W	90E	310	073146	74S	63S	50S	37S	24S	11S	2N	15N	28N	41N	54N	67N
1996	11	1	F	61E	310	092638	73S	62S	49S	36S	23S	10S	2N	16N	29N	42N	55N	68N
1997	12	1	F	32E	310	112134	73S	61S	48S	35S	22S	9S	3N	17N	30N	43N	56N	68N
1998	13	1	F	4E	310	131615	73S	61S	48S	35S	22S	9S	3N	16N	29N	43N	55N	68N
1999	1	1	F	25W	310	151039	73S	62S	49S	36S	23S	10S	2N	16N	29N	42N	55N	67N
2000	2	1	F	25W	310	170506	74S	63S	51S	35S	24S	12S	2N	15N	28N	42N	54N	67N
2001	3	1	F	54W	310	185936	75S	63S	51S	38S	25S	12S	2N	14N	28N	41N	54N	67N
2002	4	1	F	111W	310	205410	74S	63S	50S	37S	24S	11S	1N	14N	28N	41N	54N	66N
2003	5	1	F	111W	310	224846	75S	64S	52S	38S	24S	11S	1N	14N	28N	41N	54N	66N
2004	6	1	F	168W	311	004324	74S	63S	51S	38S	25S	11S	1N	14N	27N	41N	54N	66N
2005	7	1	W	163E	311	023805	74S	63S	50S	38S	24S	11S	1N	14N	28N	41N	54N	66N
2006	8	1	W	134E	311	043249	74S	63S	50S	37S	24S	11S	1N	15N	28N	41N	54N	67N
2007	9	1	W	106E	311	062736	74S	62S	50S	37S	24S	10S	2N	15N	28N	42N	55N	67N
2008	10	1	W	77E	311	082226	73S	62S	49S	36S	23S	10S	2N	16N	29N	42N	55N	68N
2009	11	1	F	48E	311	101718	73S	61S	49S	36S	22S	9S	3N	16N	30N	43N	56N	68N
2010	12	1	F	20E	311	121157	73S	61S	49S	36S	23S	9S	3N	16N	29N	42N	55N	68N
2011	1	1	F	9W	311	140621	73S	62S	49S	36S	23S	10S	2N	15N	29N	42N	55N	67N
2012	2	1	F	38W	311	160048	74S	63S	50S	37S	24S	11S	1N	15N	28N	41N	54N	66N
2013	3	1	F	66W	311	175518	74S	63S	50S	37S	24S	11S	1N	14N	28N	41N	54N	66N
2014	4	1	F	95W	311	194951	74S	63S	51S	38S	25S	11S	1N	14N	27N	40N	53N	66N
2015	5	1	F	124W	311	214427	74S	63S	51S	38S	25S	12S	1N	14N	27N	40N	53N	66N
2016	6	1	F	152W	311	233901	75S	64S	51S	38S	25S	12S	0N	14N	27N	40N	53N	66N
2017	7	1	W	179E	312	013342	74S	63S	51S	38S	25S	12S	1N	14N	27N	40N	53N	66N
2018	8	1	W	150E	312	032825	74S	63S	51S	38S	25S	11S	1N	14N	27N	41N	54N	66N
2019	9	1	W	122E	312	052312	74S	63S	50S	37S	24S	11S	1N	15N	28N	41N	54N	66N
2020	10	1	W	93E	312	071802	74S	62S	50S	37S	24S	10S	2N	15N	28N	42N	55N	67N
2021	11	1	F	64E	312	091255	73S	62S	49S	36S	23S	10S	3N	16N	29N	42N	55N	68N
2022	12	1	F	36E	312	110750	72S	61S	48S	35S	22S	9S	4N	17N	30N	43N	56N	69N
2023	13	1	F	7E	312	130229	72S	61S	48S	35S	22S	9S	3N	16N	30N	43N	56N	68N
2024	1	1	F	22W	312	145654	73S	62S	49S	36S	23S	10S	2N	16N	29N	42N	55N	67N
2025	2	1	F	50W	312	165121	73S	62S	50S	37S	24S	10S	2N	15N	28N	42N	54N	67N
2026	3	1	F	79W	312	184551	74S	63S	50S	37S	24S	11S	1N	15N	28N	41N	54N	67N
2027	4	1	F	108W	312	204024	74S	63S	50S	37S	24S	11S	1N	14N	28N	41N	54N	66N
2028	5	1	F	136W	312	223501	74S	63S	50S	37S	24S	11S	1N	14N	28N	41N	54N	66N
2029	6	1	F	165W	313	002936	74S	63S	51S	38S	25S	11S	1N	14N	27N	41N	54N	66N
2030	7	1	W	166E	313	022417	74S	63S	50S	38S	24S	11S	1N	14N	28N	41N	54N	66N
2031	8	1	W	138E	313	041900	74S	63S	50S	37S	24S	11S	1N	15N	28N	41N	54N	67N
2032	9	1	W	109E	313	061347	74S	62S	50S	37S	24S	11S	2N	15N	28N	42N	55N	67N
2033	10	1	W	80E	313	080836	73S	62S	49S	36S	23S	10S	2N	16N	29N	42N	55N	67N
2034	11	1	F	52E	313	100329	73S	61S	49S	36S	22S	9S	3N	16N	30N	43N	56N	68N
2035	12	1	F	23E	313	115807	73S	61S	49S	36S	23S	10S	3N	16N	29N	42N	55N	68N
2036	1	1	F	6W	313	135231	73S	62S	49S	37S	23S	10S	2N	15N	28N	42N	55N	67N
2037	2	1	F	34W	313	154658	74S	63S	50S	37S	24S	11S	1N	15N	28N	41N	54N	66N
2038	3	1	F	63W	313	174128	74S	63S	50S	38S	24S	11S	1N	14N	27N	41N	54N	66N
2039	4	1	F	92W	313	193601	74S	63S	51S	38S	25S	12S	1N	14N	27N	40N	53N	66N
2040	5	1	F	120W	313	213030	75S	64S	51S	38S	25S	12S	0N	13N	27N	40N	53N	65N
2041	6	1	F	149W	313	232507	75S	64S	51S	38S	25S	12S	0N	13N	27N	40N	53N	65N
2042	7	1	F	178W	314	011947	75S	64S	51S	38S	25S	12S	0N	14N	27N	40N	53N	66N
2043	8	1	W	154E	314	031430	75S	64S	51S	38S	25S	12S	0N	14N	27N	40N	53N	66N

PASS	TRACK	C	S	ALON	MODA	HRMNSE	SUB-SATELLITE POINT PICTURE LOCATION											
							LAT	LAT	LAT	LAT	LAT	LAT	LAT	LAT	LAT	LAT	LAT	LAT
2044	9	1	W	125E	314	050916	74S	63S	51S	38S	25S	11S	1N	14N	27N	41N	54N	66N
2045	10	1	W	96E	314	070405	74S	63S	50S	37S	24S	11S	1N	15N	28N	41N	54N	67N
2046	11	1	F	68E	314	085857	73S	62S	50S	37S	23S	10S	2N	15N	29N	42N	55N	67N
2047	12	1	F	39E	314	105352	73S	61S	49S	36S	23S	9S	3N	16N	30N	43N	56N	68N
2048	13	1	F	10E	314	124831	73S	61S	49S	36S	23S	10S	3N	16N	29N	42N	55N	67N
2049	1	1	F	18W	314	144255	73S	62S	50S	37S	23S	10S	2N	15N	29N	42N	55N	67N
2050	2	1	F	47W	314	163723	74S	63S	50S	37S	24S	11S	1N	15N	28N	41N	54N	66N
2051	3	1	F	76W	314	183153	74S	63S	51S	38S	25S	11S	1N	14N	27N	41N	54N	66N
2052	4	1	F	104W	314	202626	74S	63S	51S	38S	25S	12S	1N	14N	27N	40N	53N	66N
2053	5	1	F	133W	314	222102	74S	63S	51S	38S	25S	12S	1N	14N	27N	40N	53N	66N
2054	6	1	F	162W	315	001536	75S	64S	51S	38S	25S	12S	0N	14N	27N	40N	53N	66N
2055	7	1	W	170E	315	021016	75S	64S	51S	38S	25S	12S	0N	14N	27N	40N	53N	66N
2056	8	1	W	141E	315	040500	74S	63S	51S	38S	25S	12S	1N	14N	27N	40N	54N	66N
2057	9	1	W	112E	315	055946	74S	63S	50S	38S	24S	11S	1N	14N	28N	41N	54N	66N
2058	10	1	W	84E	315	075436	74S	62S	50S	37S	24S	11S	2N	15N	28N	42N	55N	67N
2059	11	1	F	55E	315	094929	73S	62S	49S	36S	23S	10S	2N	16N	29N	42N	55N	68N
2060	12	1	F	26E	315	114407	73S	62S	49S	36S	23S	10S	2N	15N	29N	42N	55N	67N
2061	1	1	F	2W	315	133831	74S	63S	50S	37S	24S	11S	1N	15N	28N	41N	54N	66N
2062	2	1	F	31W	315	153259	74S	63S	51S	38S	25S	11S	1N	14N	27N	41N	53N	66N
2063	3	1	F	60W	315	172729	74S	64S	51S	38S	25S	12S	0N	14N	27N	40N	53N	66N
2064	4	1	F	88W	315	192151	75S	64S	52S	39S	26S	13S	0N	13N	26N	39N	52N	65N
2065	5	1	F	117W	315	211625	75S	65S	52S	39S	26S	13S	0N	13N	26N	39N	52N	65N
2066	6	1	F	146W	315	231101	75S	65S	52S	39S	26S	13S	0N	12N	26N	39N	52N	65N
2067	7	1	F	174W	316	010541	75S	65S	52S	39S	26S	13S	0N	13N	26N	39N	52N	65N
2068	8	1	W	157E	316	030023	75S	64S	52S	39S	26S	13S	0N	13N	26N	39N	52N	65N
2069	9	1	W	128E	316	045509	75S	64S	52S	39S	26S	12S	0N	13N	26N	40N	53N	65N
2070	10	1	W	100E	316	064958	75S	64S	51S	38S	25S	12S	0N	14N	27N	40N	53N	66N
2071	11	1	W	71E	316	084450	74S	63S	50S	38S	24S	11S	1N	14N	28N	41N	54N	66N
2072	12	1	F	42E	316	103945	74S	62S	50S	37S	24S	10S	2N	15N	29N	42N	55N	67N
2073	13	1	F	14E	316	123424	74S	62S	50S	37S	24S	11S	2N	15N	28N	41N	54N	67N
2074	1	1	F	15W	316	142848	74S	63S	51S	38S	25S	11S	1N	14N	27N	41N	54N	66N
2075	2	1	F	44W	316	162315	75S	64S	51S	38S	25S	12S	0N	14N	27N	40N	53N	66N
2076	3	1	F	72W	316	181745	75S	64S	52S	39S	26S	12S	0N	13N	26N	40N	53N	65N
2077	4	1	F	101W	316	201219	75S	64S	52S	39S	26S	13S	0N	13N	26N	39N	52N	65N
2078	5	1	F	130W	316	220655	75S	64S	52S	39S	26S	13S	0N	13N	26N	39N	52N	65N
2079	6	1	F	158W	317	00 131	75S	64S	52S	39S	26S	13S	0N	13N	26N	39N	52N	65N
2080	7	1	W	173E	317	015613	75S	64S	52S	39S	26S	13S	0N	13N	26N	39N	52N	65N
2081	8	1	W	144E	317	035058	75S	64S	52S	39S	26S	12S	0N	13N	27N	40N	53N	65N
2082	9	1	W	116E	317	054545	75S	64S	51S	38S	25S	12S	0N	14N	27N	40N	53N	66N
2083	10	1	W	87E	317	074036	74S	63S	51S	38S	24S	11S	1N	14N	28N	41N	54N	66N
2084	11	1	F	58E	317	093530	74S	62S	50S	37S	24S	10S	2N	15N	29N	42N	55N	67N
2085	12	1	F	30E	317	113027	73S	61S	49S	36S	23S	9S	3N	16N	29N	43N	56N	68N
2086	13	1	F	1E	317	132507	73S	62S	49S	36S	23S	10S	3N	16N	29N	42N	55N	67N
2087	1	1	F	28W	317	151931	73S	62S	50S	37S	24S	10S	2N	15N	28N	41N	54N	67N
2088	2	1	F	56W	317	171359	74S	63S	50S	37S	24S	11S	1N	15N	28N	41N	54N	66N
2089	3	1	F	85W	317	190829	74S	63S	51S	38S	25S	11S	1N	14N	27N	41N	54N	66N
2090	4	1	F	114W	317	210302	74S	63S	51S	38S	25S	12S	1N	14N	27N	40N	53N	66N
2091	5	1	F	142W	317	225739	74S	63S	51S	38S	25S	12S	1N	14N	27N	40N	53N	66N
2092	6	1	F	171W	318	005211	75S	64S	51S	38S	25S	12S	0N	13N	27N	40N	53N	66N
2093	7	1	W	160E	318	024652	75S	64S	51S	38S	25S	12S	0N	14N	27N	40N	53N	66N
2094	8	1	W	132E	318	044136	74S	63S	51S	38S	25S	12S	1N	14N	27N	40N	53N	66N
2095	9	1	W	103E	318	063623	74S	63S	51S	38S	24S	11S	1N	14N	28N	41N	54N	66N
2096	10	1	W	74E	318	083113	74S	63S	50S	37S	24S	11S	2N	15N	28N	42N	55N	67N
2097	11	1	F	46E	318	102607	73S	62S	49S	36S	23S	10S	2N	16N	29N	42N	55N	68N
2098	12	1	F	17E	318	122045	73S	62S	49S	36S	23S	10S	2N	15N	29N	42N	55N	67N
2099	1	1	F	12W	318	141509	74S	63S	50S	37S	24S	11S	1N	15N	28N	41N	54N	66N
2100	2	1	F	40W	318	160936	74S	63S	51S	38S	25S	11S	1N	14N	27N	40N	54N	66N
2101	3	1	F	69W	318	180407	74S	64S	51S	38S	25S	12S	0N	14N	27N	40N	53N	66N
2102	4	1	F	98W	318	195840	75S	64S	51S	38S	25S	12S	0N	13N	27N	40N	53N	65N
2103	5	1	F	126W	318	215317	75S	64S	51S	39S	25S	12S	0N	13N	27N	40N	53N	65N
2104	6	1	F	155W	318	234750	75S	64S	52S	39S	26S	12S	0N	13N	26N	40N	53N	65N
2105	7	1	W	176E	319	014231	75S	64S	52S	39S	26S	12S	0N	13N	27N	40N	53N	65N
2106	8	1	W	148E	319	033716	75S	64S	51S	38S	25S	12S	0N	14N	27N	40N	53N	66N
2107	9	1	W	119E	319	053203	74S	63S	51S	38S	25S	12S	1N	14N	27N	41N	54N	66N
2108	10	2	W	90E	319	072703	74S	62S	50S	37S	24S	10S	2N	15N	28N	42N	55N	67N
2109	11	2	F	62E	319	092156	73S	62S	49S	36S	23S	10S	3N	16N	29N	42N	55N	68N
2110	12	2	F	33E	319	111653	72S	61S	48S	35S	22S	9S	4N	17N	30N	43N	56N	69N
2111	13	2	F	4E	319	131132	72S	61S	48S	35S	22S	9S	3N	16N	30N	43N	56N	68N
2112	1	2	F	24W	319	150556	73S	62S	49S	36S	23S	10S	2N	16N	29N	42N	55N	67N
2113	2	2	F	53W	319	170024	73S	62S	50S	37S	24S	10S	2N	15N	28N	42N	55N	67N
2114	3	2	F	82W	319	185454	74S	63S	50S	37S	24S	11S	1N	15N	28N	41N	54N	67N
2115	4	2	F	110W	319	204927	74S	63S	50S	37S	24S	11S	1N	15N	28N	41N	54N	66N
2116	5	2	F	139W	319	224403	74S	63S	50S	37S	24S	11S	1N	14N	28N	41N	54N	66N
2117	6	2	F	168W	320	003837	74S	63S	51S	38S	25S	11S	1N	14N	27N	41N	54N	66N
2118	7	2	W	164E	320	023317	74S	63S	51S	38S	25S	11S	1N	14N	28N	41N	54N	66N

PASS	TRACK	C	S	ALON	MODA	HRMNSE	SUB-SATELLITE POINT PICTURE LOCATION											
							LAT	LAT	LAT	LAT	LAT	LAT	LAT	LAT	LAT	LAT	LAT	LAT
2119	8	2	W	135E	320	042801	74S	63S	50S	37S	24S	11S	1N	15N	28N	41N	54N	67N
2120	9	2	W	106E	320	062248	74S	62S	50S	37S	24S	11S	2N	15N	28N	42N	55N	67N
2121	10	2	W	78E	320	081738	73S	62S	49S	36S	23S	10S	2N	16N	29N	42N	55N	68N
2122	11	2	F	49E	320	101230	73S	61S	49S	36S	23S	9S	3N	16N	30N	43N	56N	68N
2123	12	2	F	21E	320	120708	73S	61S	49S	36S	23S	10S	3N	16N	29N	42N	55N	68N
2124	1	2	F	8W	320	140132	73S	62S	49S	37S	23S	10S	2N	15N	29N	42N	55N	67N
2125	2	2	F	37W	320	155600	74S	62S	50S	37S	24S	11S	1N	15N	28N	41N	54N	67N
2126	3	2	F	65W	320	175030	74S	63S	50S	37S	24S	11S	1N	14N	28N	41N	54N	66N
2127	4	2	F	94W	320	194503	74S	63S	51S	38S	25S	11S	1N	14N	27N	41N	54N	66N
2128	5	2	F	123W	320	213939	74S	63S	51S	38S	25S	12S	1N	14N	27N	40N	54N	66N
2129	6	2	F	151W	320	233413	74S	64S	51S	38S	25S	12S	0N	14N	27N	40N	53N	66N
2130	7	2	W	180W	321	012853	74S	63S	51S	38S	25S	12S	1N	14N	27N	40N	53N	66N
2131	8	2	W	151E	321	032337	74S	63S	51S	38S	25S	11S	1N	14N	27N	41N	54N	66N
2132	9	2	W	123E	321	051823	74S	63S	50S	37S	24S	11S	1N	15N	28N	41N	54N	67N
2133	10	2	W	94E	321	071313	74S	62S	50S	37S	24S	10S	2N	15N	28N	42N	55N	67N
2134	11	2	F	65E	321	090806	73S	62S	49S	36S	23S	10S	3N	16N	29N	42N	55N	68N
2135	12	2	F	37E	321	110301	72S	61S	48S	35S	22S	9S	3N	17N	30N	43N	56N	69N
2136	13	2	F	8E	321	125741	72S	61S	48S	35S	22S	9S	3N	16N	30N	43N	56N	68N
2137	1	2	F	21W	321	145205	73S	62S	49S	36S	23S	10S	2N	16N	29N	42N	55N	67N
2138	2	2	F	49W	321	164632	73S	62S	50S	37S	24S	10S	2N	15N	28N	42N	55N	67N
2139	3	2	F	78W	321	184102	74S	63S	50S	37S	24S	11S	1N	15N	28N	41N	54N	67N
2140	4	2	F	107W	321	203535	74S	63S	50S	37S	24S	11S	1N	14N	28N	41N	54N	66N
2141	5	2	F	135W	321	223012	74S	63S	50S	38S	24S	11S	1N	14N	28N	41N	54N	66N
2142	6	2	F	164W	322	002448	74S	63S	51S	38S	25S	11S	1N	14N	28N	41N	54N	66N
2143	7	2	W	167E	322	021928	74S	63S	51S	38S	24S	11S	1N	14N	28N	41N	54N	66N
2144	8	2	W	139E	322	041412	74S	63S	50S	37S	24S	11S	1N	15N	28N	41N	54N	67N
2145	9	2	W	110E	322	060859	74S	62S	50S	37S	24S	11S	2N	15N	28N	42N	55N	67N
2146	10	2	W	81E	322	080348	73S	62S	49S	36S	23S	10S	2N	16N	29N	42N	55N	68N
2147	11	2	F	53E	322	095841	73S	61S	49S	36S	22S	9S	3N	16N	30N	43N	56N	68N
2148	12	2	F	24E	322	115321	73S	61S	49S	36S	23S	9S	3N	16N	29N	42N	55N	68N
2149	1	2	F	5W	322	134745	73S	62S	49S	37S	23S	10S	2N	15N	29N	42N	55N	67N
2150	2	2	F	33W	322	154212	74S	62S	50S	37S	24S	11S	1N	15N	28N	41N	54N	67N
2151	3	2	F	62W	322	173642	74S	63S	50S	38S	24S	11S	1N	14N	28N	41N	54N	66N
2152	4	2	F	91W	322	193115	74S	63S	51S	38S	25S	11S	1N	14N	27N	41N	54N	66N
2153	5	2	F	119W	322	212551	74S	63S	51S	38S	25S	12S	1N	14N	27N	41N	54N	66N
2154	6	2	F	148W	322	232030	74S	63S	51S	38S	25S	12S	1N	14N	27N	41N	54N	66N
2155	7	2	F	177W	323	011505	74S	63S	51S	38S	25S	12S	1N	14N	27N	40N	53N	66N
2156	8	2	W	155E	323	030949	74S	63S	51S	38S	25S	11S	1N	14N	27N	41N	54N	66N
2157	9	2	W	126E	323	050436	74S	63S	50S	37S	24S	11S	1N	15N	28N	41N	54N	67N
2158	10	2	W	97E	323	065925	74S	62S	50S	37S	24S	10S	2N	15N	28N	42N	55N	67N
2159	11	2	F	69E	323	085418	73S	62S	49S	36S	23S	10S	3N	16N	29N	42N	56N	68N
2160	12	2	F	40E	323	104914	72S	61S	48S	35S	22S	9S	3N	17N	30N	43N	56N	69N
2161	13	2	F	11E	323	124356	72S	61S	48S	35S	22S	9S	3N	17N	30N	43N	56N	68N
2162	1	2	F	17W	323	143820	73S	61S	49S	36S	23S	10S	3N	16N	29N	42N	55N	68N
2163	2	2	F	46W	323	163247	73S	62S	50S	37S	24S	10S	2N	15N	29N	42N	55N	67N
2164	3	2	F	75W	323	182717	74S	62S	50S	37S	24S	11S	2N	15N	28N	41N	54N	67N
2165	4	2	F	103W	323	202150	74S	63S	50S	37S	24S	11S	1N	15N	28N	41N	54N	67N
2166	5	2	F	132W	323	221626	74S	63S	50S	37S	24S	11S	1N	14N	28N	41N	54N	67N
2167	6	2	F	161W	324	001100	74S	63S	51S	38S	25S	11S	1N	14N	28N	41N	54N	66N
2168	7	2	W	171E	324	020540	74S	63S	51S	38S	24S	11S	1N	14N	28N	41N	54N	66N
2169	8	2	W	142E	324	040024	74S	63S	50S	37S	24S	11S	1N	15N	28N	41N	54N	67N
2170	9	2	W	113E	324	055510	74S	62S	50S	37S	24S	11S	2N	15N	28N	42N	55N	67N
2171	10	2	W	85E	324	075000	73S	62S	49S	36S	23S	10S	2N	16N	29N	42N	55N	68N
2172	11	2	F	56E	324	094452	73S	61S	49S	36S	23S	9S	3N	16N	30N	43N	56N	68N
2173	12	2	F	27E	324	113933	73S	61S	49S	36S	23S	10S	3N	16N	29N	42N	55N	68N
2174	1	2	F	1W	324	133356	73S	62S	49S	37S	23S	10S	2N	15N	29N	42N	55N	67N
2175	2	2	F	30W	324	152822	74S	63S	50S	37S	24S	11S	1N	15N	28N	41N	54N	67N
2176	3	2	F	59W	324	172250	74S	63S	51S	38S	25S	11S	1N	14N	27N	41N	54N	66N
2177	4	2	F	87W	324	191722	74S	63S	51S	38S	25S	12S	1N	14N	27N	40N	53N	66N
2178	5	2	F	116W	324	211157	74S	64S	51S	38S	25S	12S	0N	14N	27N	40N	53N	66N
2179	6	2	F	145W	324	230635	75S	64S	51S	38S	25S	12S	0N	14N	27N	40N	53N	66N
2180	7	2	F	173W	325	010109	75S	64S	51S	39S	25S	12S	0N	13N	27N	40N	53N	66N
2181	8	2	W	158E	325	025551	75S	64S	51S	38S	25S	12S	0N	14N	27N	40N	53N	66N
2182	9	2	W	129E	325	045037	74S	63S	51S	38S	25S	12S	1N	14N	27N	41N	54N	66N
2183	10	2	W	101E	325	064525	74S	63S	50S	37S	24S	11S	1N	15N	28N	41N	54N	67N
2184	11	2	W	72E	325	084017	74S	62S	50S	37S	24S	10S	2N	15N	29N	42N	55N	67N
2185	12	2	F	43E	325	103511	73S	62S	49S	36S	23S	10S	3N	16N	29N	43N	56N	68N
2186	13	2	F	15E	325	122952	73S	62S	49S	36S	23S	10S	2N	16N	29N	42N	55N	68N
2187	1	2	F	14W	325	142415	73S	62S	50S	37S	24S	11S	2N	15N	28N	41N	54N	67N
2188	2	2	F	43W	325	161841	74S	63S	50S	38S	24S	11S	1N	14N	28N	41N	54N	66N
2189	3	2	F	71W	325	181310	74S	63S	51S	38S	25S	12S	1N	14N	27N	40N	53N	66N
2190	4	2	F	100W	325	200742	75S	64S	51S	38S	25S	12S	0N	14N	27N	40N	53N	66N
2191	5	2	F	129W	325	220217	75S	64S	51S	39S	25S	12S	0N	13N	27N	40N	53N	66N
2192	6	2	F	157W	325	235658	75S	64S	51S	38S	25S	12S	0N	14N	27N	40N	53N	66N
2193	7	2	W	174E	326	015139	75S	64S	51S	38S	25S	12S	0N	14N	27N	40N	53N	66N

PASS	TRACK	C	S	ALON	MODA	HRMNSL	SUB-SATELLITE POINT PICTURE LOCATION											
							LAT	LAT	LAT	LAT	LAT	LAT	LAT	LAT	LAT	LAT	LAT	LAT
2194	8	2	W	145E	326	034623	74S	63S	51S	38S	25S	12S	1N	14N	27N	41N	54N	66N
2195	9	2	W	117E	326	054110	74S	63S	51S	38S	24S	11S	1N	14N	28N	41N	54N	67N
2196	10	2	W	88E	326	073559	74S	63S	50S	37S	24S	11S	2N	15N	28N	42N	55N	67N
2197	11	2	F	59E	326	093052	73S	62S	49S	36S	23S	10S	2N	16N	29N	42N	55N	68N
2198	12	2	F	31E	326	112548	73S	61S	48S	35S	22S	9S	3N	17N	30N	43N	56N	69N
2199	13	2	F	2E	326	132030	72S	61S	48S	35S	22S	9S	3N	17N	30N	43N	56N	69N
2200	1	2	F	27W	326	151453	73S	62S	49S	36S	23S	10S	2N	16N	29N	42N	55N	67N
2201	2	2	F	55W	326	170919	74S	62S	50S	37S	24S	11S	2N	15N	28N	41N	54N	67N
2202	3	2	F	84W	326	190348	74S	63S	50S	37S	24S	11S	1N	14N	28N	41N	54N	67N
2203	4	2	F	113W	326	205820	74S	63S	51S	38S	25S	11S	1N	14N	27N	41N	54N	66N
2204	5	2	F	141W	326	225255	74S	63S	51S	38S	25S	12S	1N	14N	27N	41N	54N	66N
2205	6	2	F	170W	327	004732	74S	63S	51S	38S	25S	12S	1N	14N	27N	41N	54N	66N
2206	7	2	W	161E	327	024212	74S	63S	51S	38S	25S	12S	1N	14N	27N	41N	54N	66N
2207	8	2	W	133E	327	043655	74S	63S	51S	38S	25S	11S	1N	14N	28N	41N	54N	66N
2208	9	2	W	104E	327	063141	74S	63S	50S	37S	24S	11S	1N	15N	28N	41N	54N	67N
2209	10	2	W	75E	327	082631	73S	62S	50S	37S	24S	10S	2N	15N	29N	42N	55N	67N
2210	11	2	F	47E	327	102123	73S	62S	49S	36S	23S	10S	3N	16N	29N	43N	56N	68N
2211	12	2	F	18E	327	121603	73S	62S	49S	36S	23S	10S	2N	16N	29N	42N	55N	67N
2212	1	2	F	11W	327	141026	74S	62S	50S	37S	24S	11S	1N	15N	28N	41N	54N	67N
2213	2	2	F	39W	327	160451	74S	63S	51S	38S	25S	11S	1N	14N	27N	41N	54N	66N
2214	3	2	F	68W	327	175920	74S	64S	51S	38S	25S	12S	0N	14N	27N	40N	53N	66N
2215	4	2	F	97W	327	195352	75S	64S	51S	39S	25S	12S	0N	13N	27N	40N	53N	66N
2216	5	2	F	125W	327	214827	75S	64S	52S	39S	26S	12S	0N	13N	27N	40N	53N	65N
2217	6	2	F	154W	327	234307	75S	64S	52S	39S	26S	12S	0N	13N	27N	40N	53N	66N
2218	7	2	W	177E	328	013748	75S	64S	51S	39S	25S	12S	0N	13N	27N	40N	53N	66N
2219	8	2	W	149E	328	033231	75S	64S	51S	38S	25S	12S	0N	14N	27N	40N	53N	66N
2220	9	2	W	120E	328	052718	74S	63S	51S	38S	25S	12S	1N	14N	27N	41N	54N	66N
2221	10	2	W	91E	328	072208	74S	63S	50S	37S	24S	11S	1N	15N	28N	41N	54N	67N
2222	11	2	F	63E	328	092702	46S	33S	19S	6S	6N	20N	33N	46N	59N	71N	78N	73N
2223	12	2	F	34E	328	111212	72S	61S	48S	35S	22S	9S	4N	17N	31N	44N	57N	69N
2224	13	2	F	5E	328	130636	73S	61S	49S	36S	23S	10S	3N	16N	29N	42N	56N	68N
2225	1	2	F	23W	328	150100	73S	62S	50S	37S	24S	10S	2N	15N	29N	42N	55N	67N
2226	2	2	F	52W	328	165527	74S	63S	50S	37S	24S	11S	1N	15N	28N	41N	54N	67N
2227	3	2	F	81W	328	184958	74S	63S	51S	38S	25S	11S	1N	14N	28N	41N	54N	66N
2228	4	2	F	109W	328	204431	74S	63S	51S	38S	25S	12S	1N	14N	27N	41N	54N	66N
2229	5	2	F	138W	328	223907	74S	63S	51S	38S	25S	12S	1N	14N	27N	41N	54N	66N
2230	6	2	F	167W	329	003339	75S	64S	51S	38S	25S	12S	0N	14N	27N	40N	53N	66N
2231	7	2	W	165E	329	022820	75S	64S	51S	38S	25S	12S	0N	14N	27N	40N	53N	66N
2232	8	2	W	136E	329	042303	74S	63S	51S	38S	25S	12S	1N	14N	27N	41N	54N	66N
2233	9	2	W	107E	329	061749	74S	63S	51S	38S	25S	11S	1N	14N	28N	41N	54N	67N
2234	10	2	W	79E	329	081252	73S	62S	49S	36S	23S	10S	2N	16N	29N	42N	55N	68N
2235	11	2	F	50E	329	100744	73S	61S	49S	36S	23S	9S	3N	16N	30N	43N	56N	68N
2236	12	2	F	21E	329	120223	73S	61S	49S	36S	23S	10S	3N	16N	29N	43N	56N	68N
2237	1	2	F	7W	329	135647	73S	62S	50S	37S	24S	10S	2N	15N	29N	42N	55N	67N
2238	2	2	F	36W	329	155114	74S	63S	50S	37S	24S	11S	1N	15N	28N	41N	54N	67N
2239	3	2	F	65W	329	174544	74S	63S	51S	38S	25S	11S	1N	14N	28N	41N	54N	66N
2240	4	2	F	93W	329	194017	74S	63S	51S	38S	25S	12S	1N	14N	27N	41N	54N	66N
2241	5	2	F	122W	329	213453	74S	63S	51S	38S	25S	12S	1N	14N	27N	41N	54N	66N
2242	6	2	F	151W	329	232923	75S	64S	51S	39S	25S	12S	0N	13N	27N	40N	53N	66N
2243	7	2	W	179W	330	012403	75S	64S	51S	38S	25S	12S	0N	14N	27N	40N	53N	66N
2244	8	2	W	152E	330	031847	74S	64S	51S	38S	25S	12S	1N	14N	27N	41N	54N	66N
2245	9	2	W	123E	330	051333	74S	63S	51S	38S	25S	11S	1N	14N	28N	41N	54N	67N
2246	10	2	W	95E	330	070822	74S	63S	50S	37S	24S	11S	1N	15N	28N	42N	55N	67N
2247	11	2	F	66E	330	090314	73S	62S	50S	37S	23S	10S	2N	16N	29N	42N	55N	68N
2248	12	2	F	37E	330	105809	73S	61S	49S	36S	23S	9S	3N	16N	30N	43N	56N	69N
2249	13	2	F	9E	330	125249	73S	61S	49S	36S	23S	10S	3N	16N	29N	43N	56N	68N
2250	1	2	F	20W	330	144713	73S	62S	50S	37S	24S	10S	2N	15N	29N	42N	55N	67N
2251	2	2	F	49W	330	164140	74S	63S	50S	37S	24S	11S	1N	15N	28N	41N	54N	67N
2252	3	2	F	77W	330	183610	74S	63S	51S	38S	25S	11S	1N	14N	28N	41N	54N	67N
2253	4	2	F	106W	330	203043	74S	63S	51S	38S	25S	12S	1N	14N	27N	41N	54N	66N
2254	5	2	F	107W	330	222519	75S	65S	52S	38S	25S	12S	2N	14N	27N	41N	54N	67N
2255	6	2	W	135W	331	001958	75S	65S	52S	39S	26S	13S	1N	14N	27N	41N	55N	67N
2256	7	2	W	168E	331	021439	74S	63S	51S	38S	25S	12S	1N	14N	28N	41N	54N	66N
2257	8	2	W	139E	331	040922	74S	63S	51S	38S	25S	11S	1N	14N	28N	41N	54N	67N
2258	9	2	W	111E	331	060409	74S	63S	50S	37S	24S	11S	1N	15N	28N	42N	55N	67N
2259	10	2	W	82E	331	075859	73S	62S	50S	37S	24S	10S	2N	15N	29N	42N	55N	68N
2260	11	2	F	53E	331	095352	73S	62S	49S	36S	23S	10S	3N	16N	30N	43N	56N	68N
2261	12	2	F	25E	331	114832	73S	62S	49S	36S	23S	10S	3N	16N	29N	42N	55N	68N
2262	1	2	F	4W	331	134256	73S	62S	50S	37S	24S	10S	2N	15N	28N	42N	55N	67N
2263	2	2	F	33W	331	153723	74S	63S	50S	37S	24S	11S	1N	15N	28N	41N	54N	67N
2264	3	2	F	61W	331	173153	74S	63S	51S	38S	25S	11S	1N	14N	27N	41N	54N	66N
2265	4	2	F	90W	331	192626	74S	63S	51S	38S	25S	12S	1N	14N	27N	41N	54N	66N
2266	5	2	F	119W	331	212102	75S	65S	52S	39S	26S	13S	1N	14N	27N	41N	54N	66N
2267	6	2	F	147W	331	231541	74S	64S	51S	38S	25S	12S	0N	14N	27N	40N	54N	66N
2268	7	2	W	176W	4 1	011018	75S	64S	51S	38S	25S	12S	0N	14N	27N	40N	54N	66N

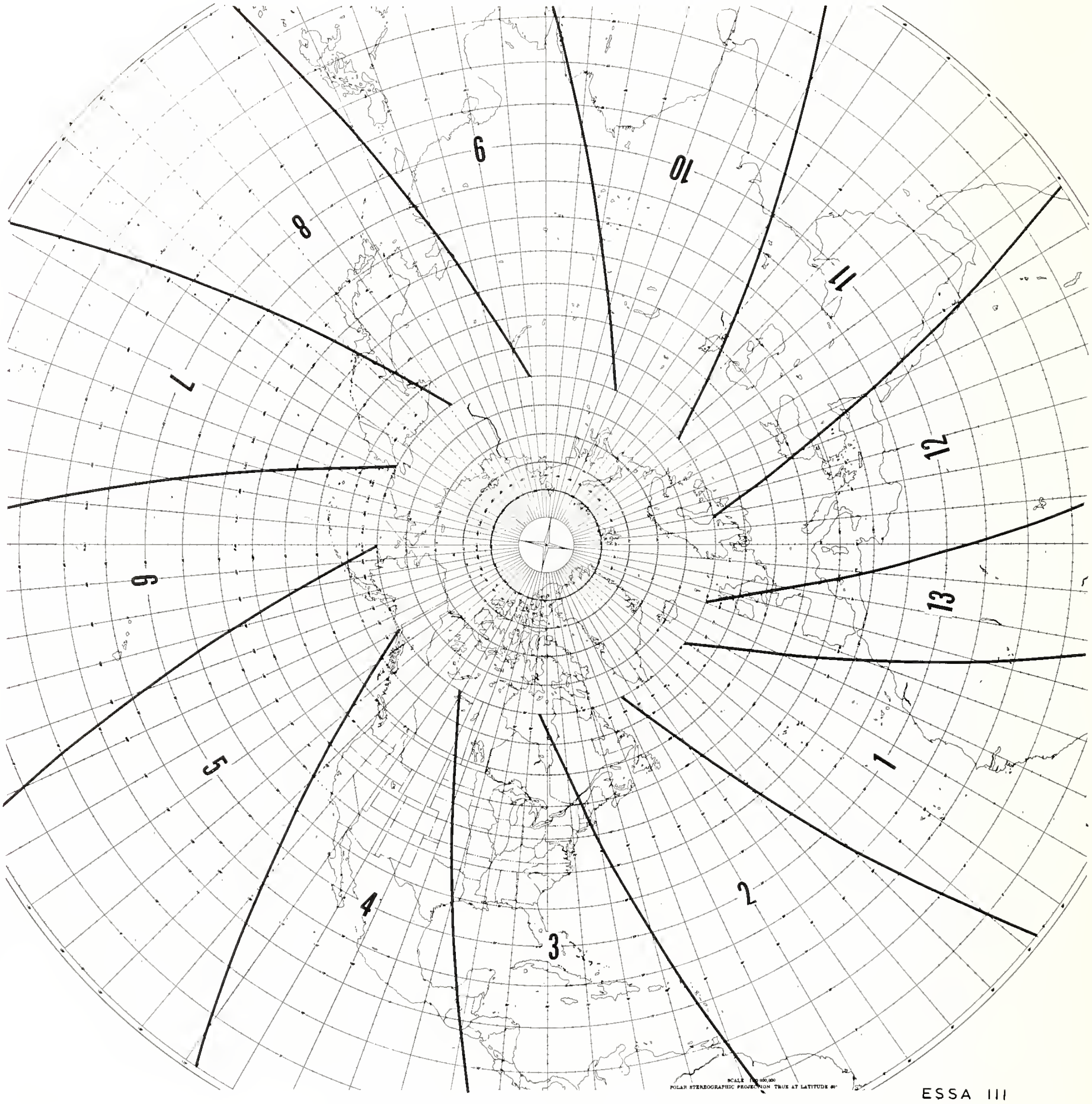
```
PASS TRACK  C   S   ALON MODA HRMNSE         SUB-SATELLITE POINT PICTURE LOCATION
                                        LAT LAT LAT LAT LAT LAT LAT LAT LAT LAT LAT LAT

2269     8  2   W   155E   4 1 030502  75S 65S 52S 39S 26S 13S  1N 14N 28N 41N 54N 66N
2770     9  2   W   126E   4 1 045948  75S 64S 51S 38S 25S 12S  1N 15N 28N 41N 54N 67N
2271    10  2   F    97E   4 1 065438  75S 64S 52S 38S 25S 12S  2N 15N 28N 42N 55N 67N
```

TABLE 1

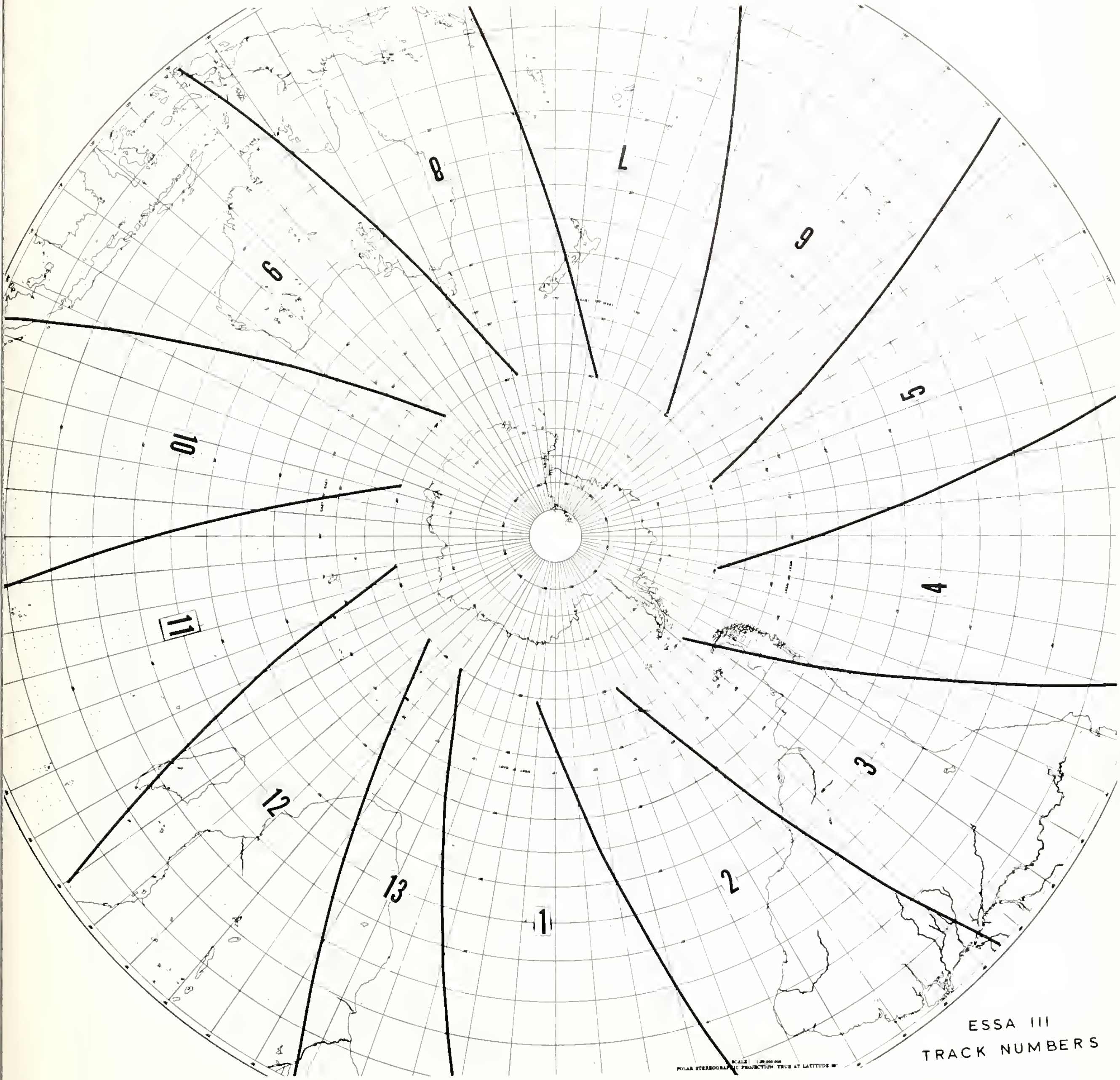
TRACK TABLE FOR ESSA III

Range of Ascending Nodes	Track No.
0W - 28.7W	1
28.7W - 57.4W	2
57.4W - 86.1W	3
86.1W - 114.8W	4
114.8W - 143.5W	5
143.5W - 172.2W	6
172.2W - 159.1E	7
159.1E - 130.4E	8
130.4E - 101.7E	9
101.7E - 73.0E	10
73.0E - 44.3E	11
44.3E - 15.6E	12
15.6E - 0	13

Difference between Tracks - 28.7°


6
10
8
11
7
12
9
13
5
1
4
2
3
SCALE
POLAR STEREOGRAPHIC PROJECTION TRUE AT LATITUDE 60°

ESSA III
TRACK NUMBERS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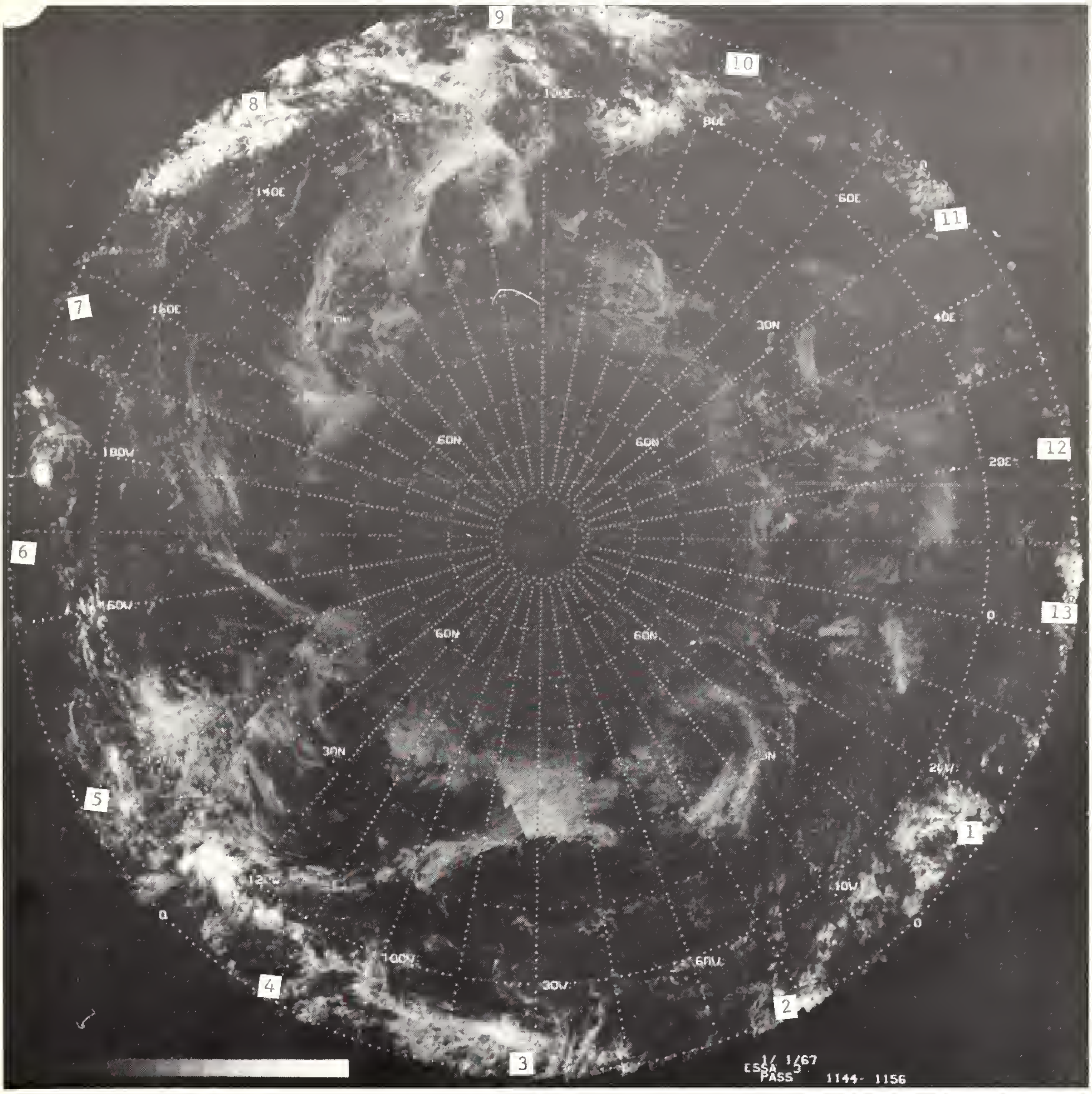
1
SCALE
POLAR STEREOGRAPHIC PROJECTION TRUE AT LATITUDE

ESSA III
TRACK NUMBERS


9
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100E
80E
120E
140E
60E
11
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160E
40E
30N
180W
60N
60N
12
20E
6
160W
0
13
60N
60N
30N
30N
20W
5
1
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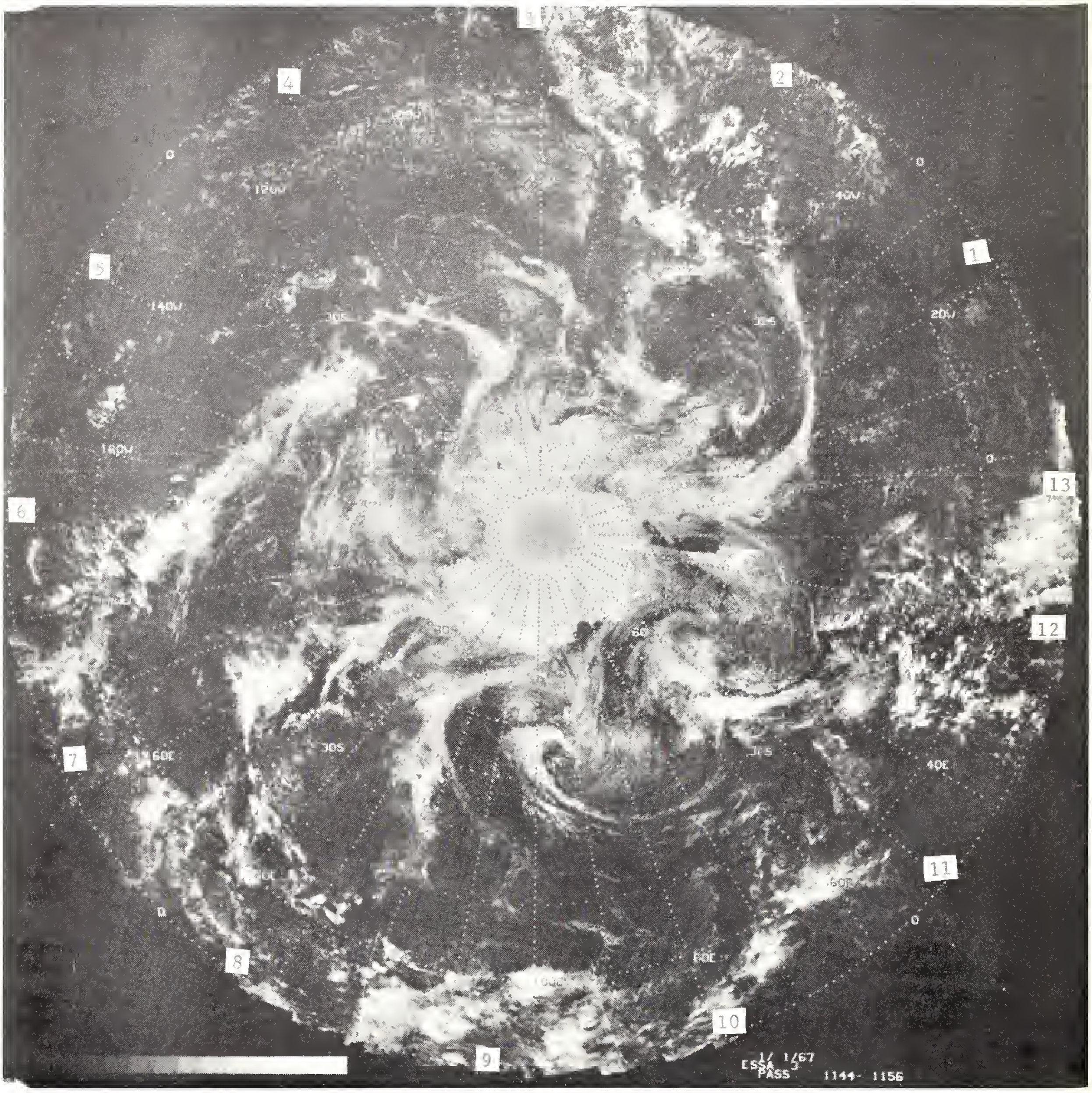
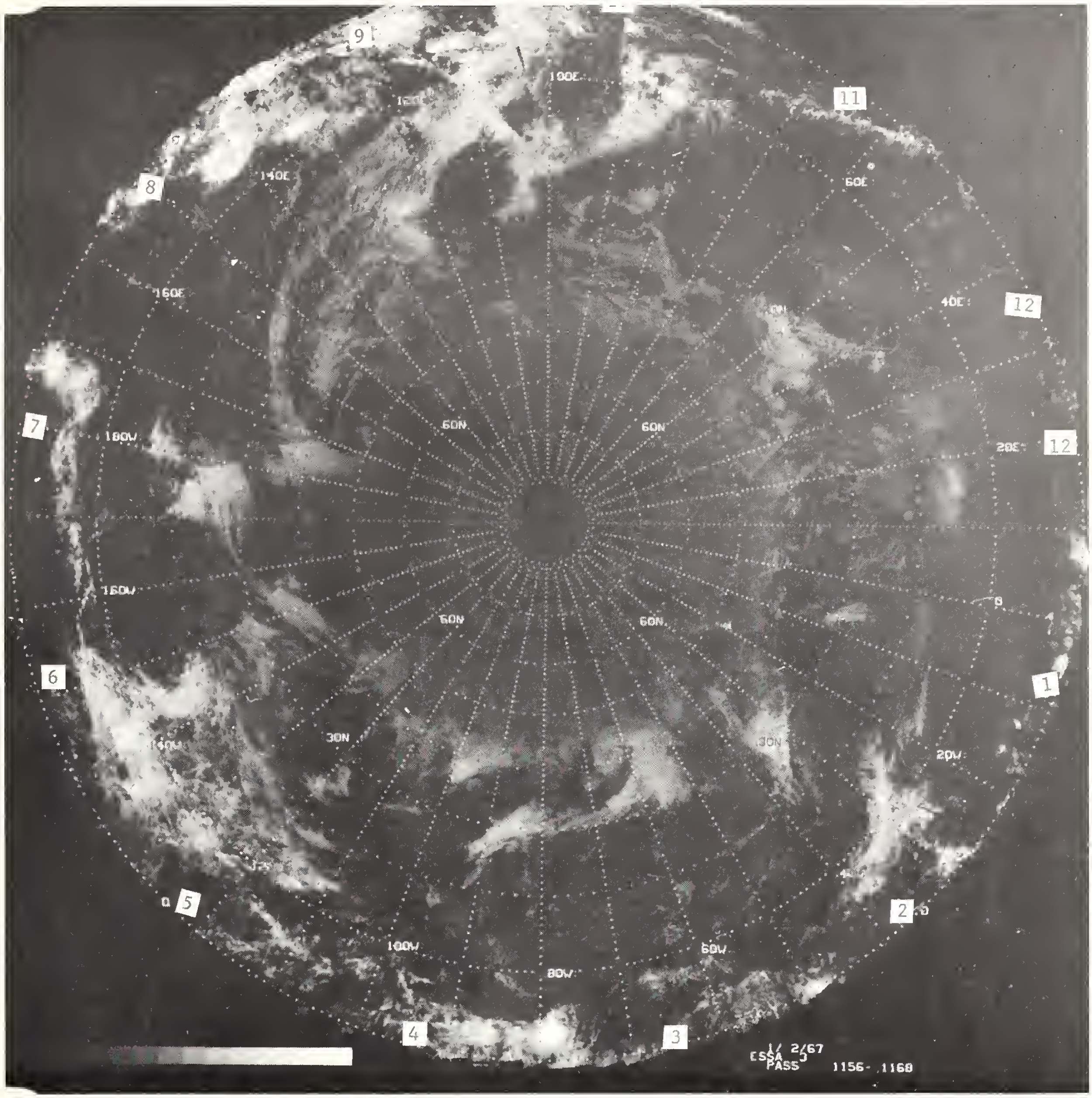
0
100W
60W
4
30W
2
3
1/ 1/67
ESSA 3
PASS 1144- 1156


3
4
2
0
120W
0
40W
1
5
140W
30S
30S
20W
160W
0
13
6
12
60S
30S
7
160E
30S
30S
40E
11
0
60E
100E
8
60E
100E
10
9
1/ 1/67
ESSA 3
PASS 1144- 1156


9
100E
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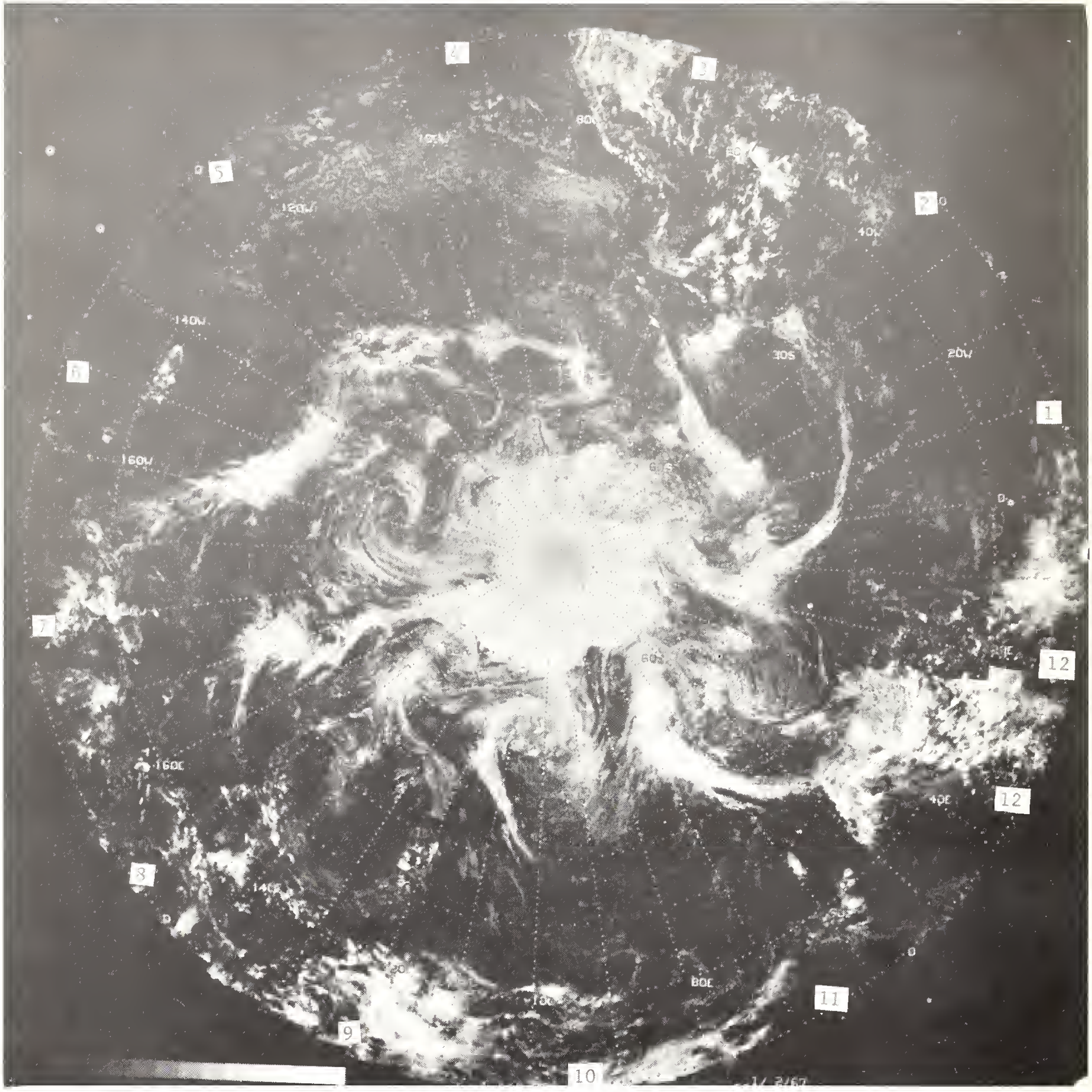
120E
140E
8
60E
160E
40E
12
7
180W
60N
60N
20E
12
160W
60N
60N
0
6
1
30N
140W
30N
20W
5
100W
60W
2
80W
4
3
1/ 2/67
ESSA 3
PASS
1156- 1168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5
2
100W
80W
60W
120W
40W
140W
30S
20W
6
1
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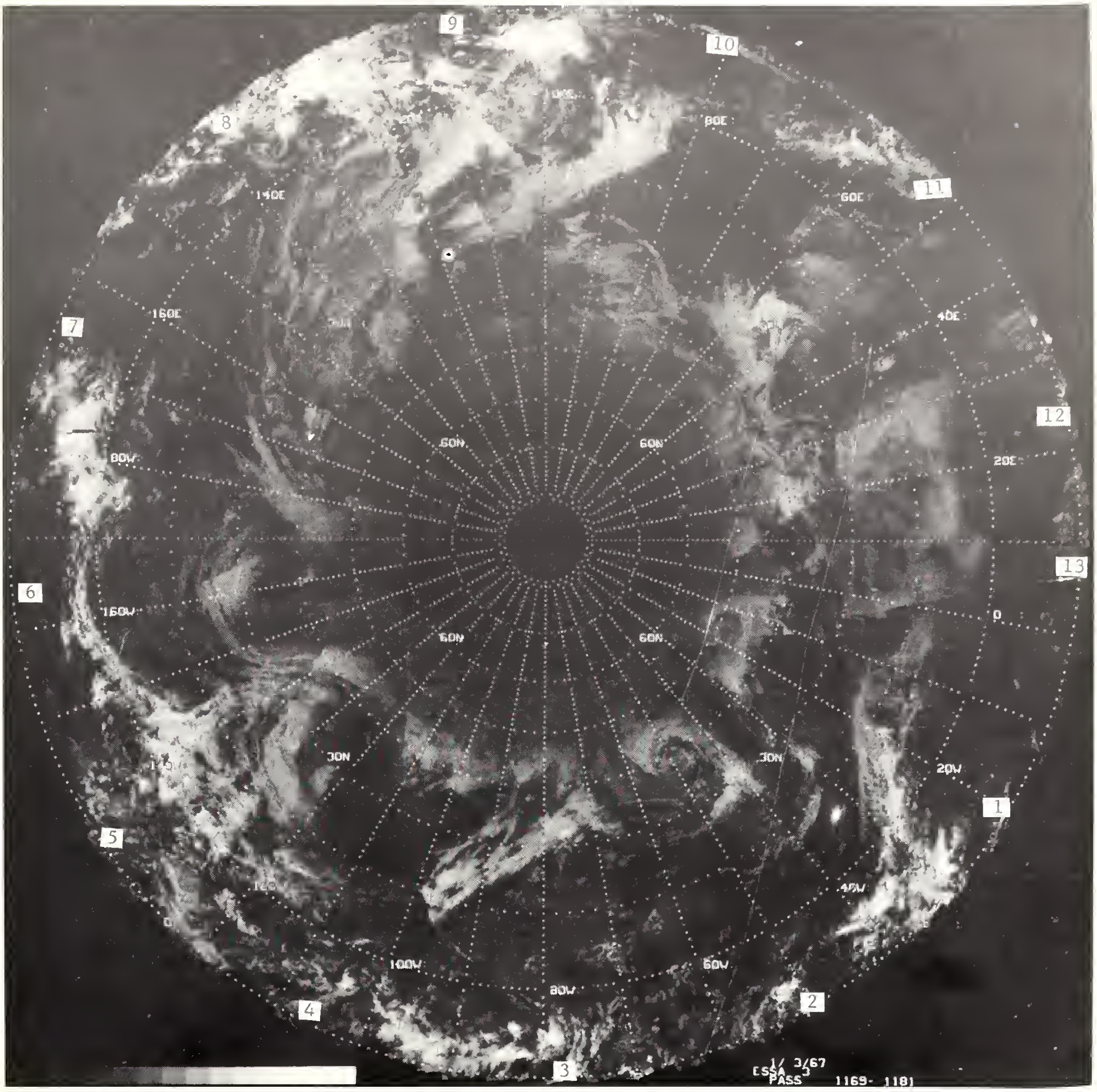
60S
7
60S
12
160E
12
40E
8
140E
80E
11
100E
9
10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12
13
1
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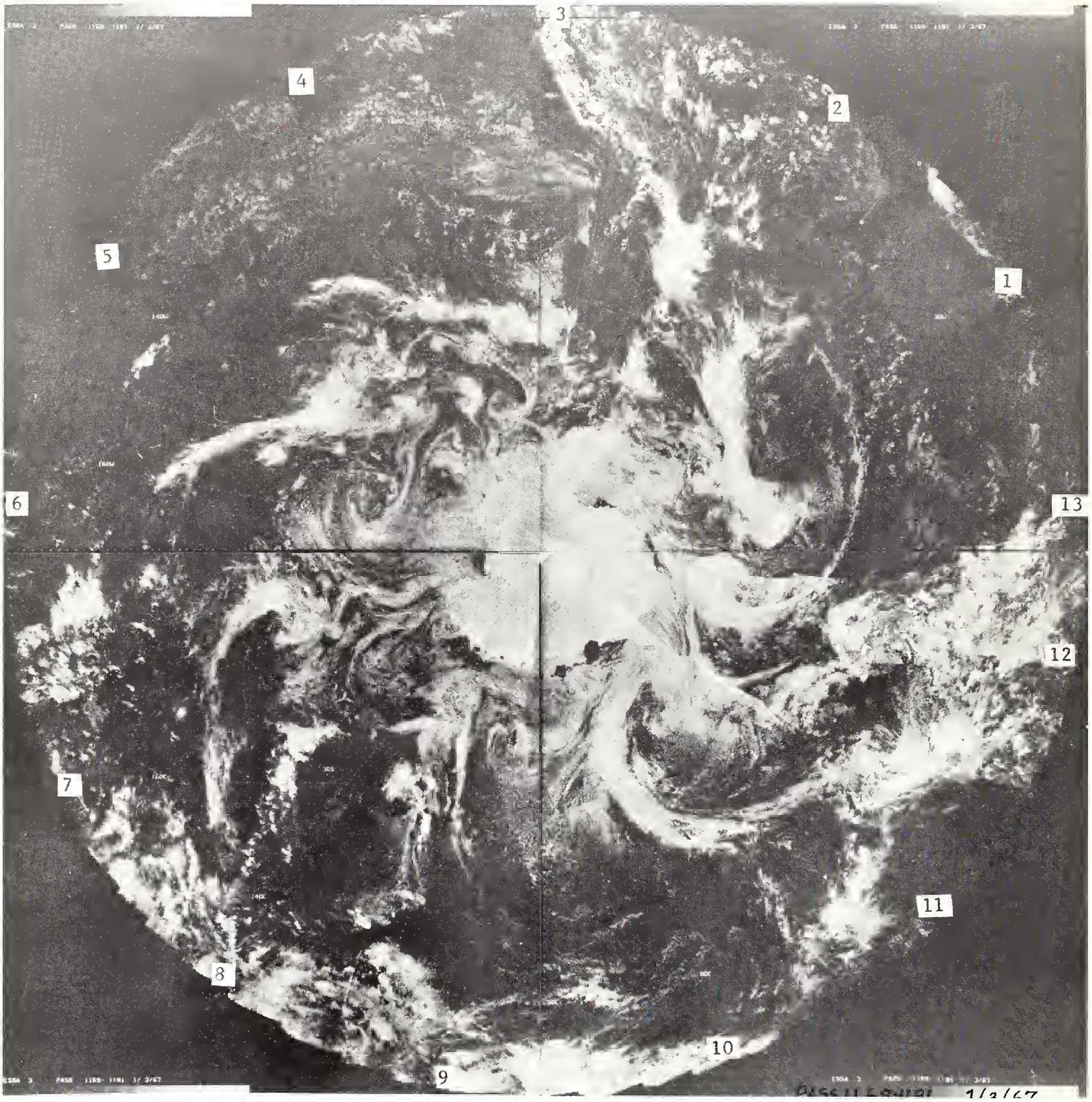
4
5
6
7
8
100E
80E
60E
40E
20E
0
20W
40W
60W
80W
100W
120W
140W
160W
180W
160E
140E
120E
60N
60N
60N
60N
30N
30N
1/ 3/67
ESSA 3
PASS 1169- 1181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12
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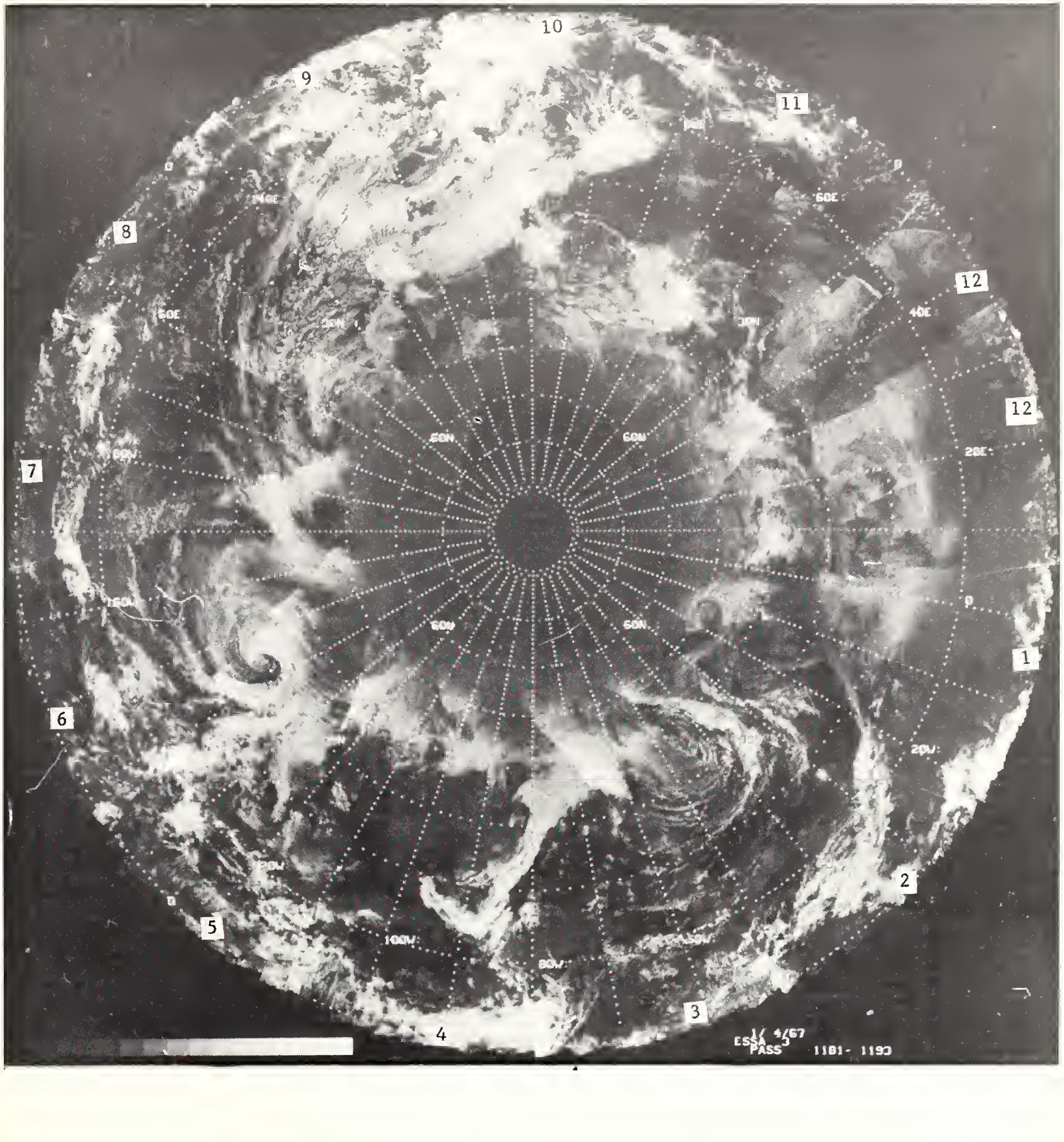
11
8
10
9
1/3/67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9
11
8
12
12
7
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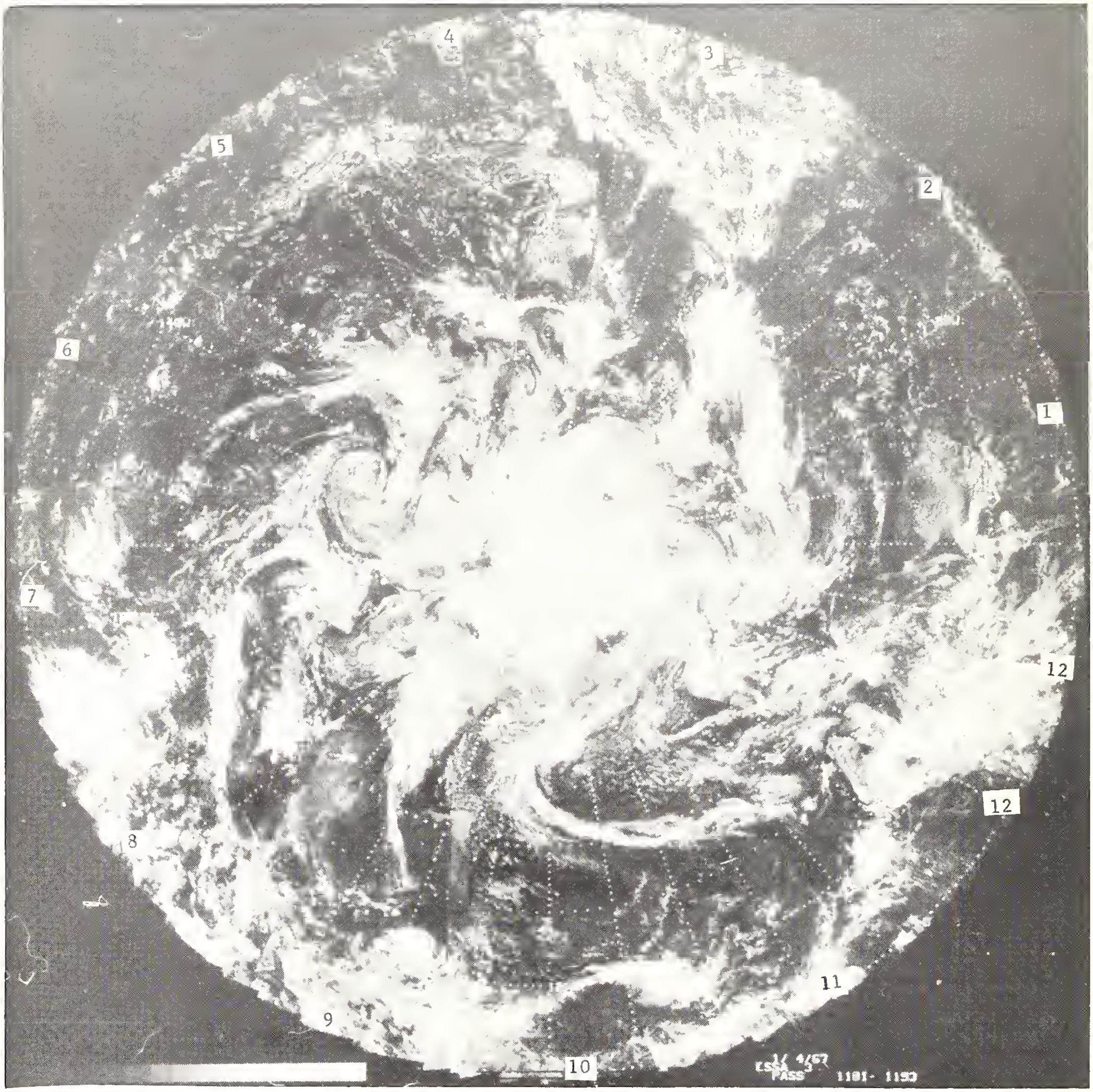
6
2
5
3
4
60N
60N
60N
60N
20N
20N
60E
40E
20E
0
0
20W
80W
100W
120W
160W
1/ 4/67
ESSA 3
PASS 1181- 1193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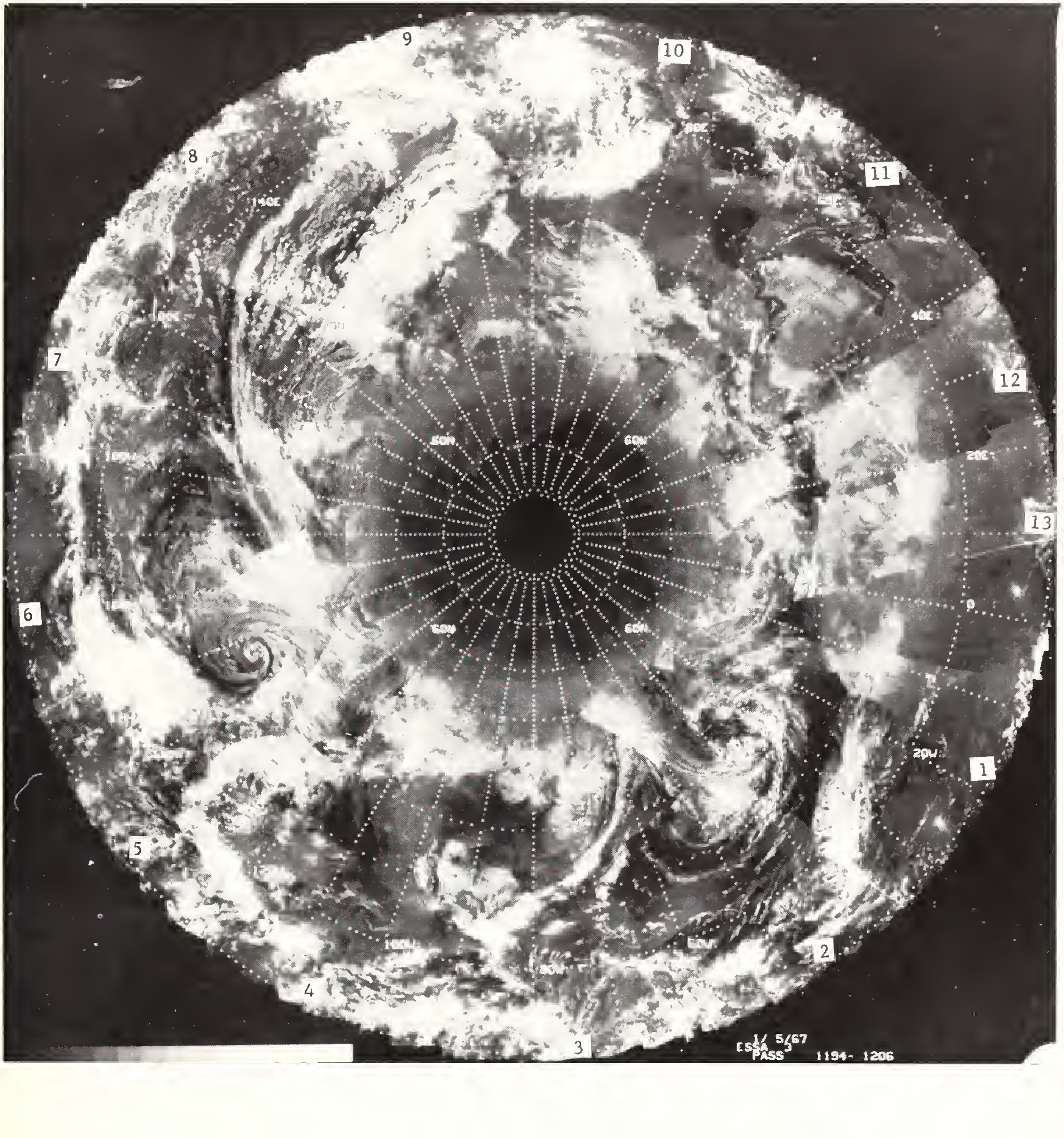
8
11
9
10
1/ 4/67
ESSA 3
PASS 1181- 1193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140E
80E
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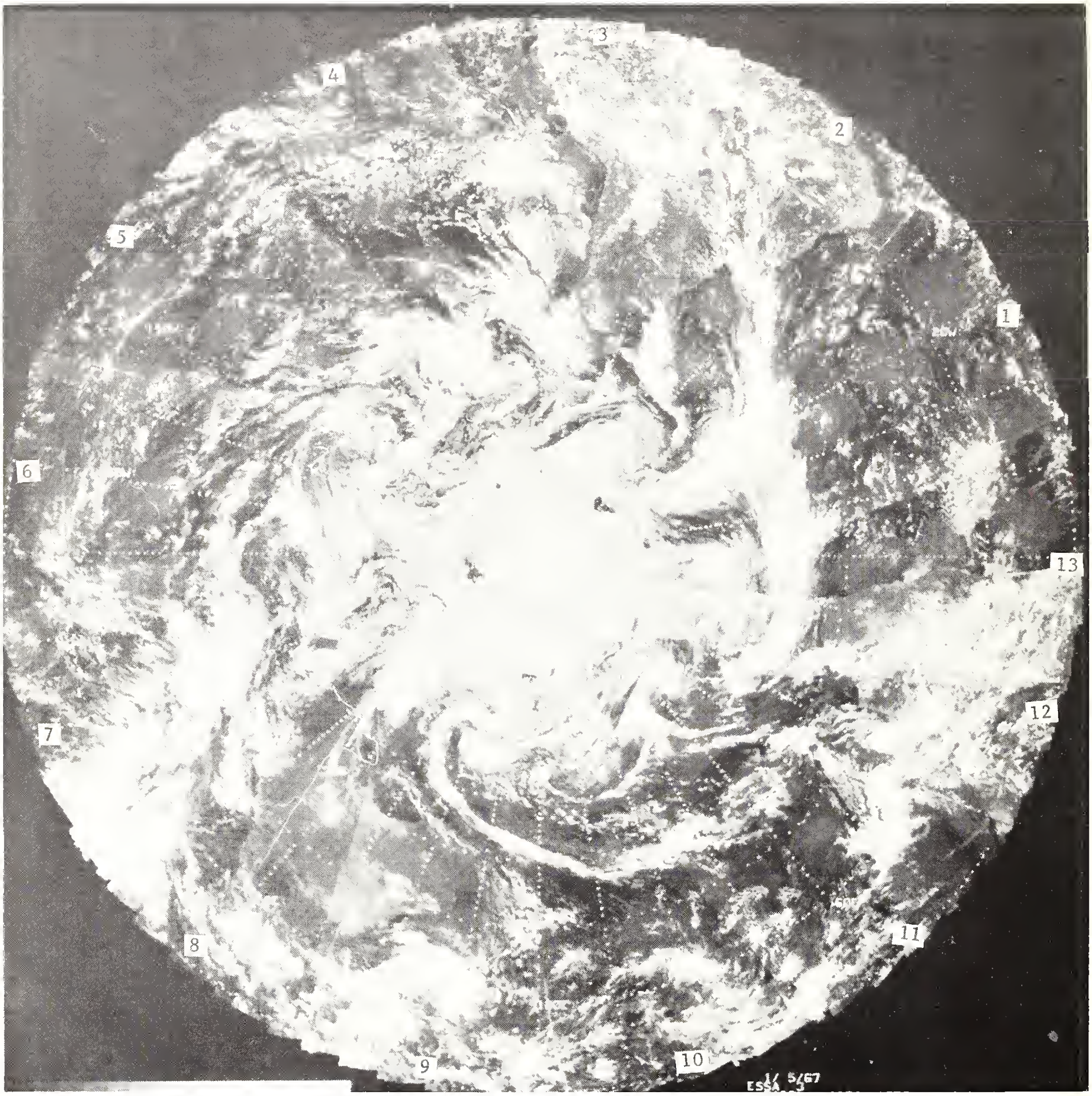
40E
7
12
100W
60N
60N
20E
13
6
60N
60N
0
20W
1
5
120W
100W
80W
60W
2
4
3
1/ 5/67
ESSA 3
PASS 1194- 1206

3
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20W
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11
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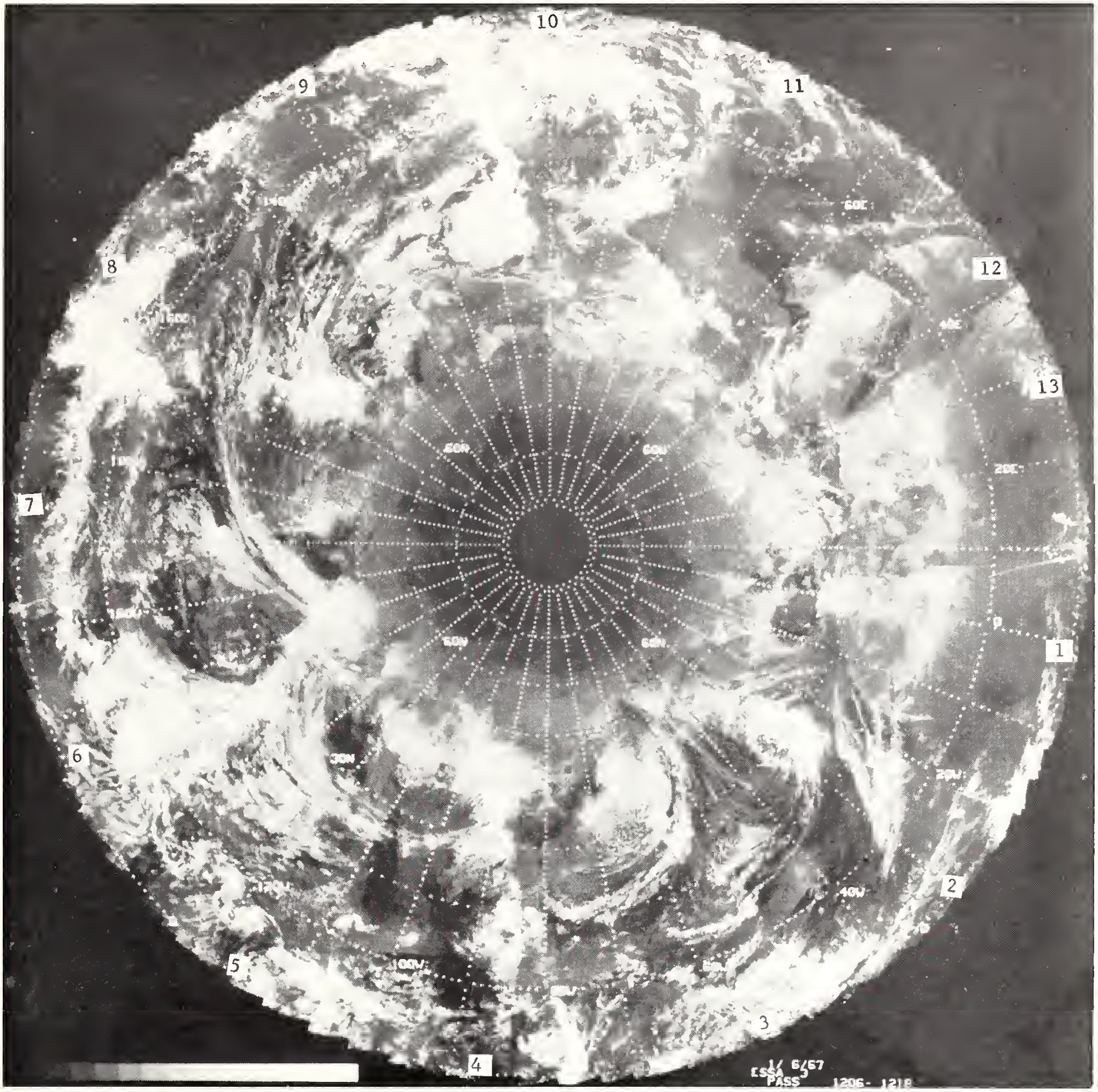
10
1/ 5/67
ESSA 3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13
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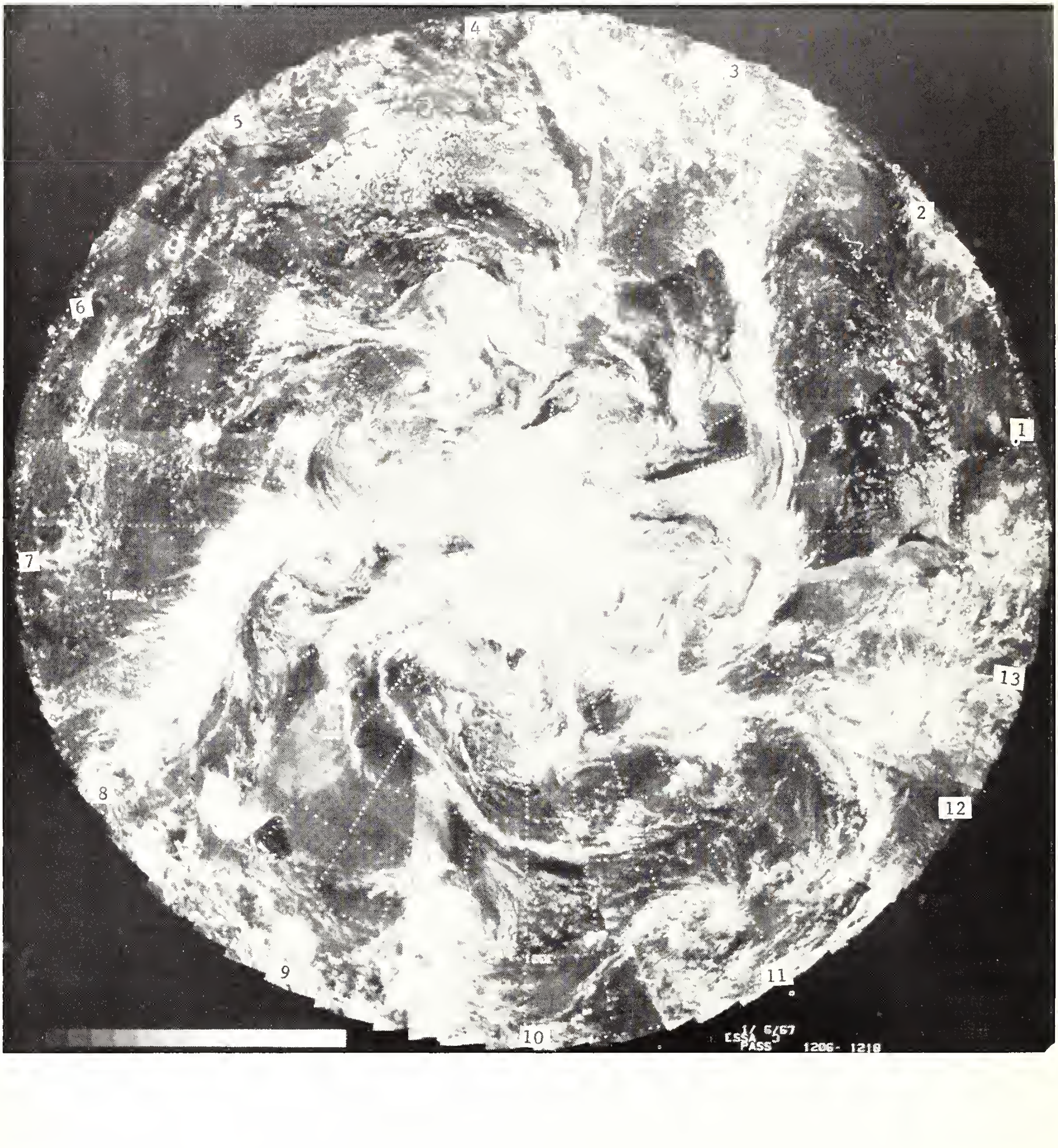
4
140E
180
160W
60E
40E
20E
0
20W
40W
60W
80W
100W
120W
60N
30N
1/ 6/67
ESSA 3
PASS 1206- 1218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6
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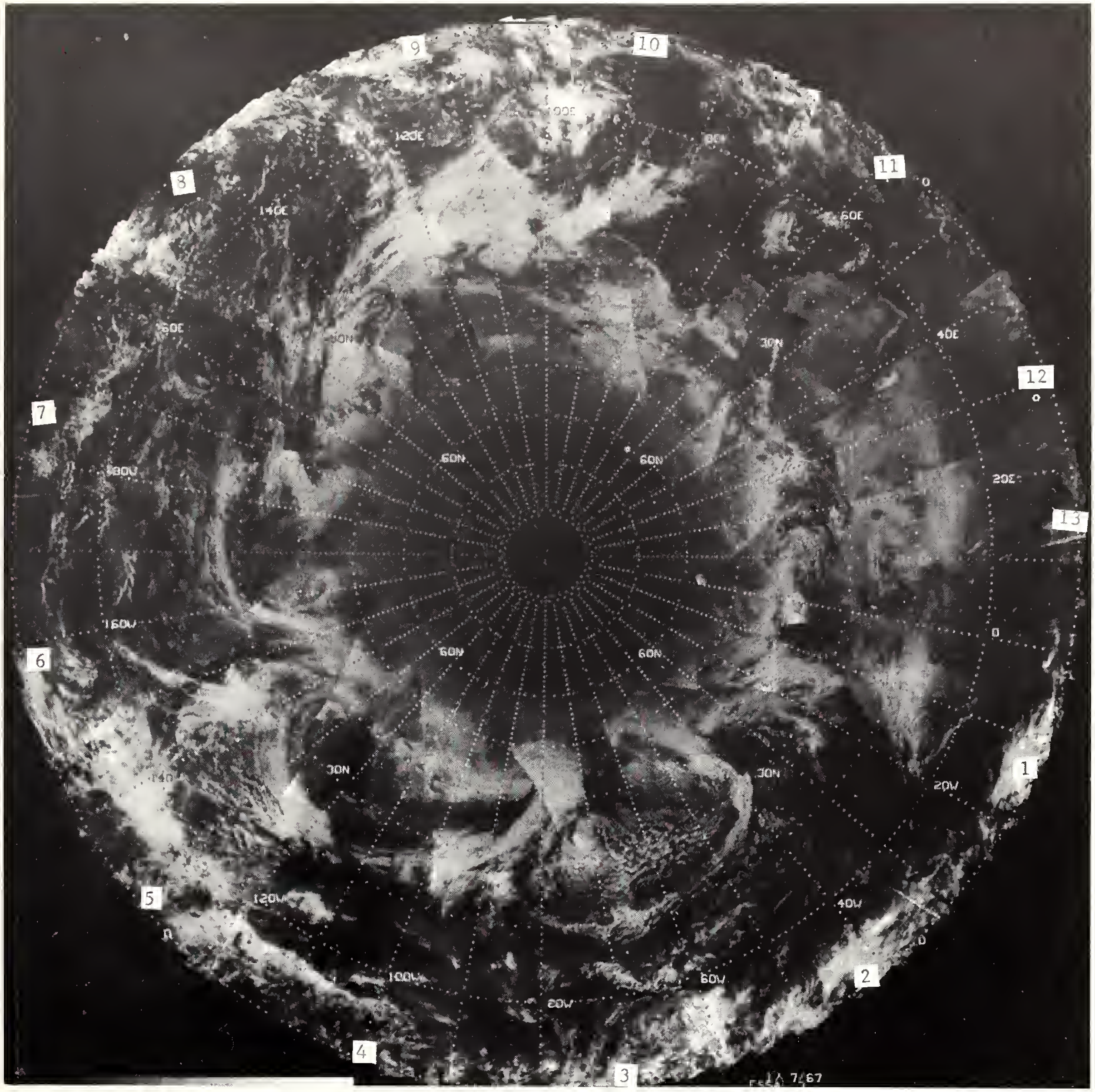
7
100W
13
8
12
9
100E
11
10
1/ 6/67
ESSA 3
PASS 1206- 1218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100E
120E
80W
11
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60E
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140E
160E
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40E
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60N
180W
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160W
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30N
20W
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140W
5
120W
40W
100W
60W
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80W
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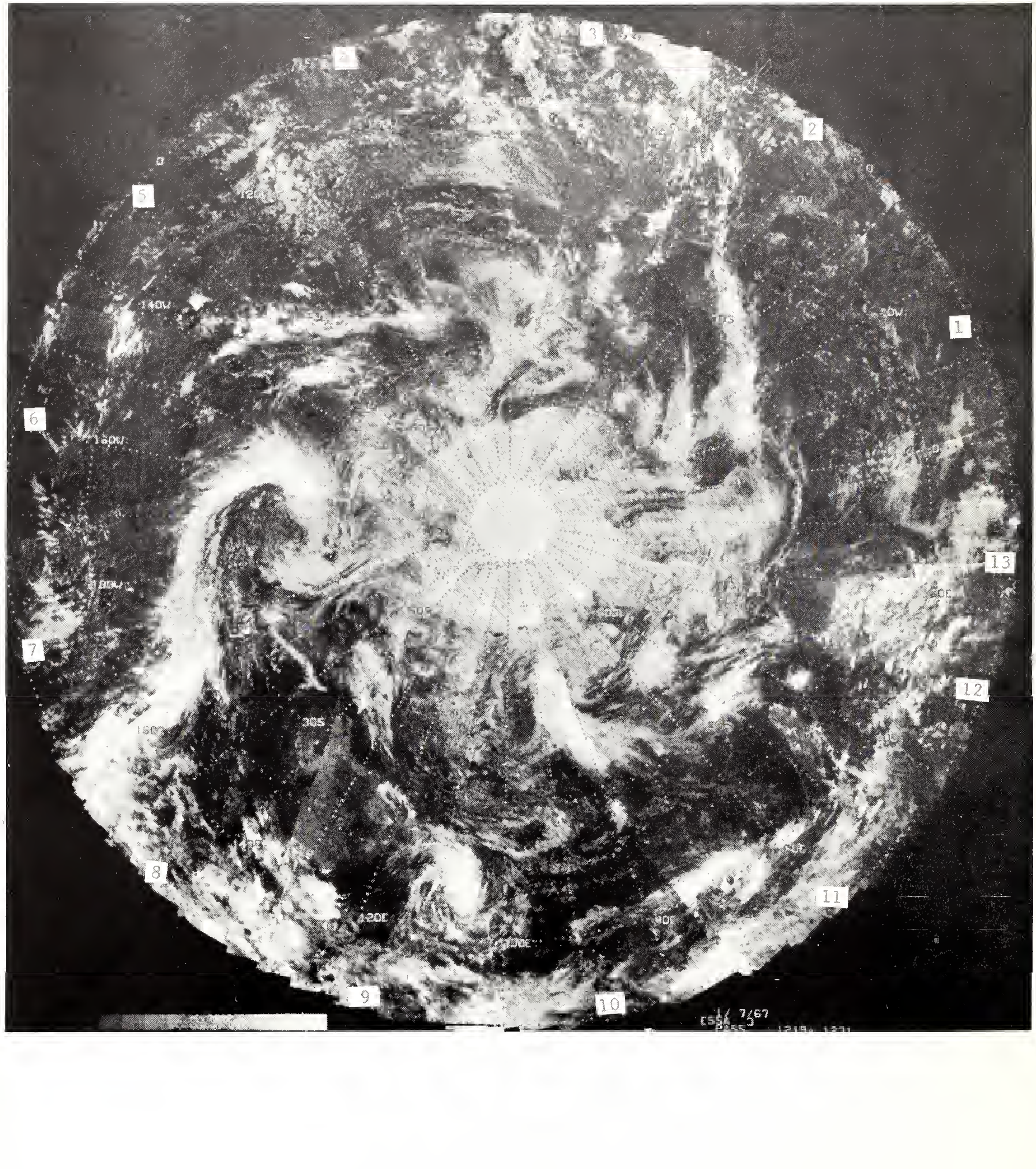
3
7 67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120W
140W
1
6
160W
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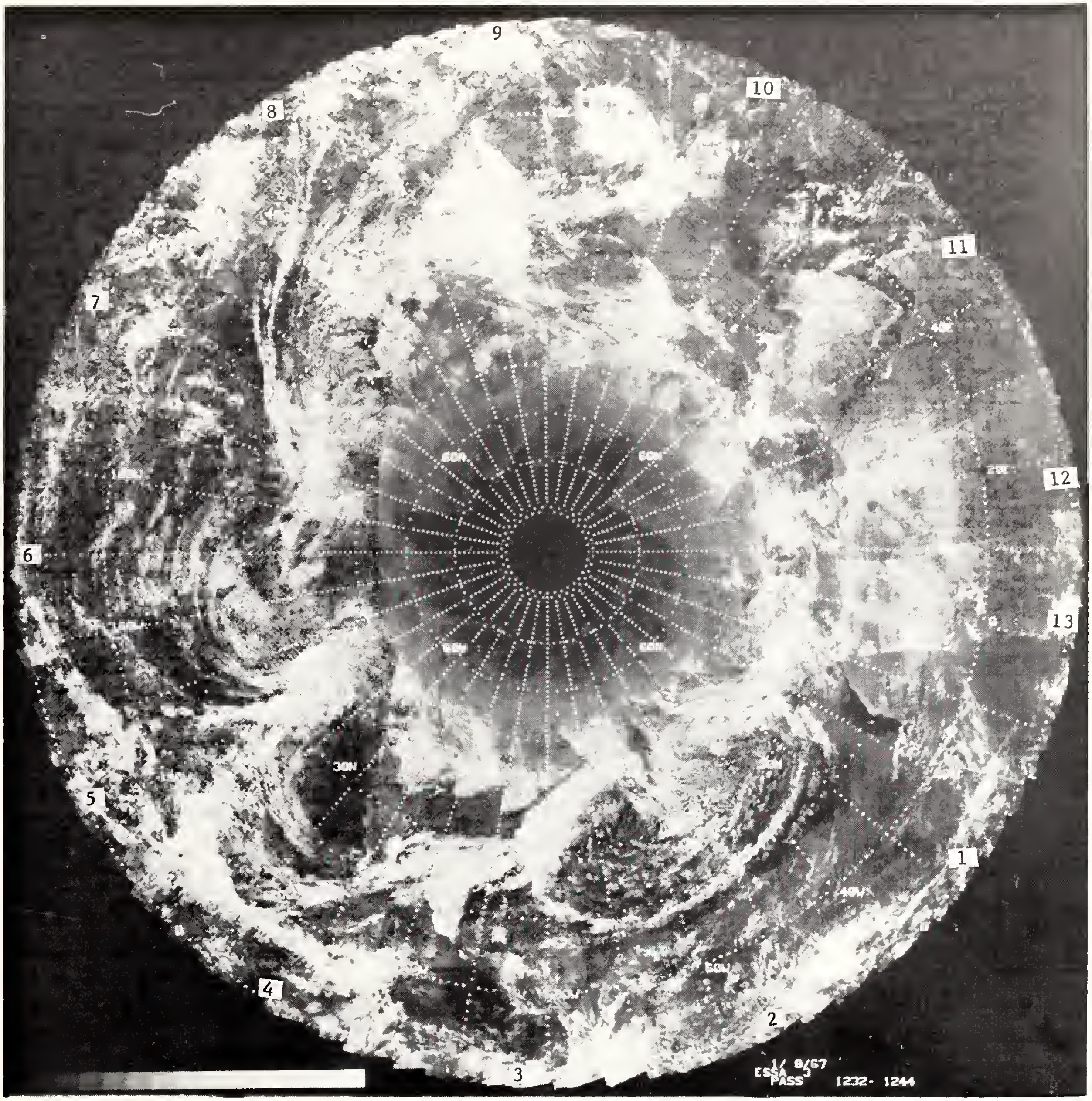
12
30S
160E
8
11
120E
100E
90E
9
10
1/ 7/67
ESSA 3
PASS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12
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13
5
1
4
2
3
60N
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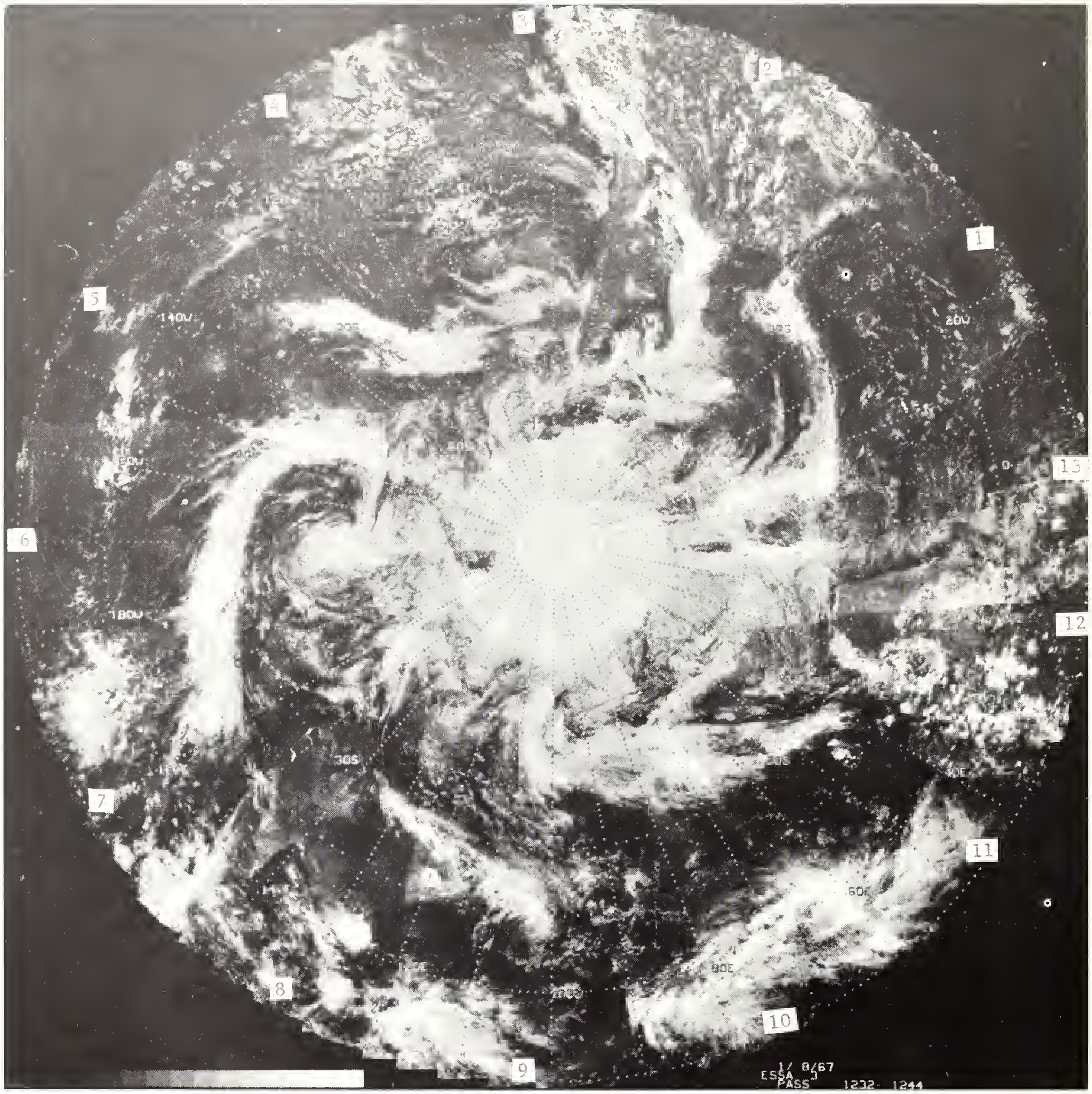
60N
60N
30N
40E
20E
40W
60W
1/ 8/67
ESSA 3
PASS 1232- 1244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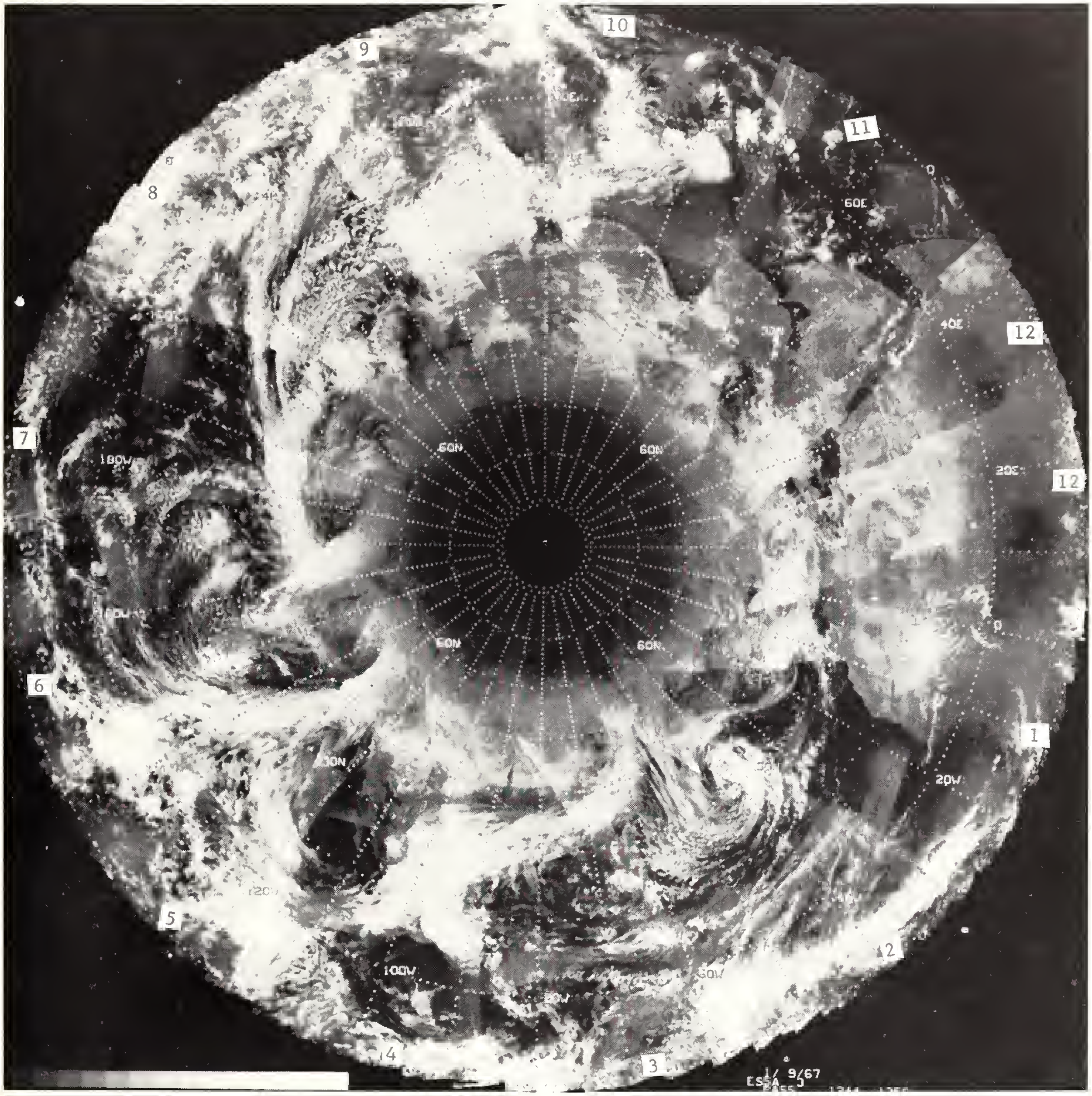
30S
30S
20W
13
0
6
12
180W
30S
30S
60E
7
11
80E
8
10
9
1/ 8/67
ESSA 3
PASS 1232 1244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4
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60N
60N
60N
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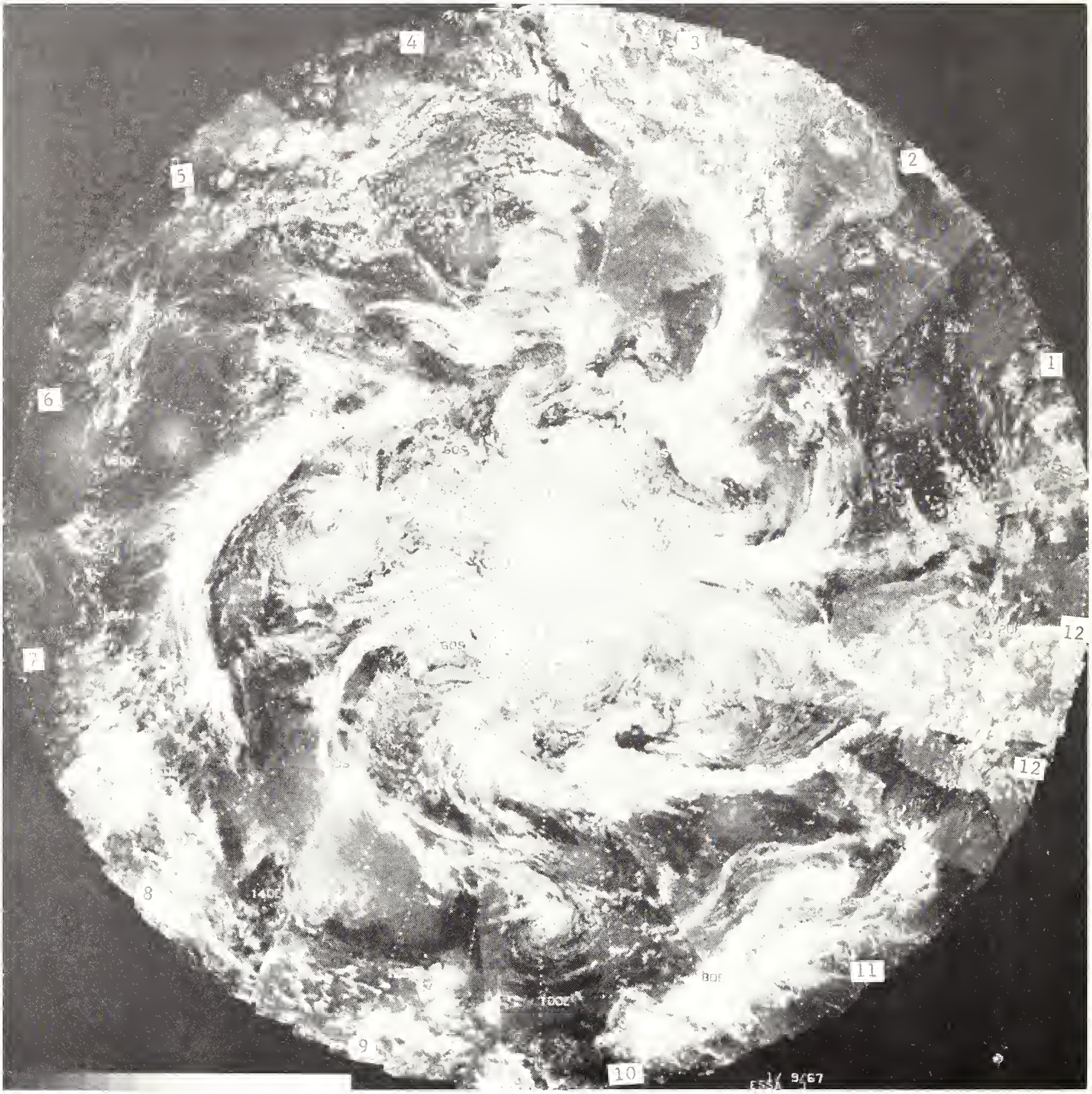
120W
100W
80W
60W
20W
0
20E
40E
60E
1/ 9/67
ESSA 3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20W
1
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60S
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60S
12
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140E
8
80E
11
100E
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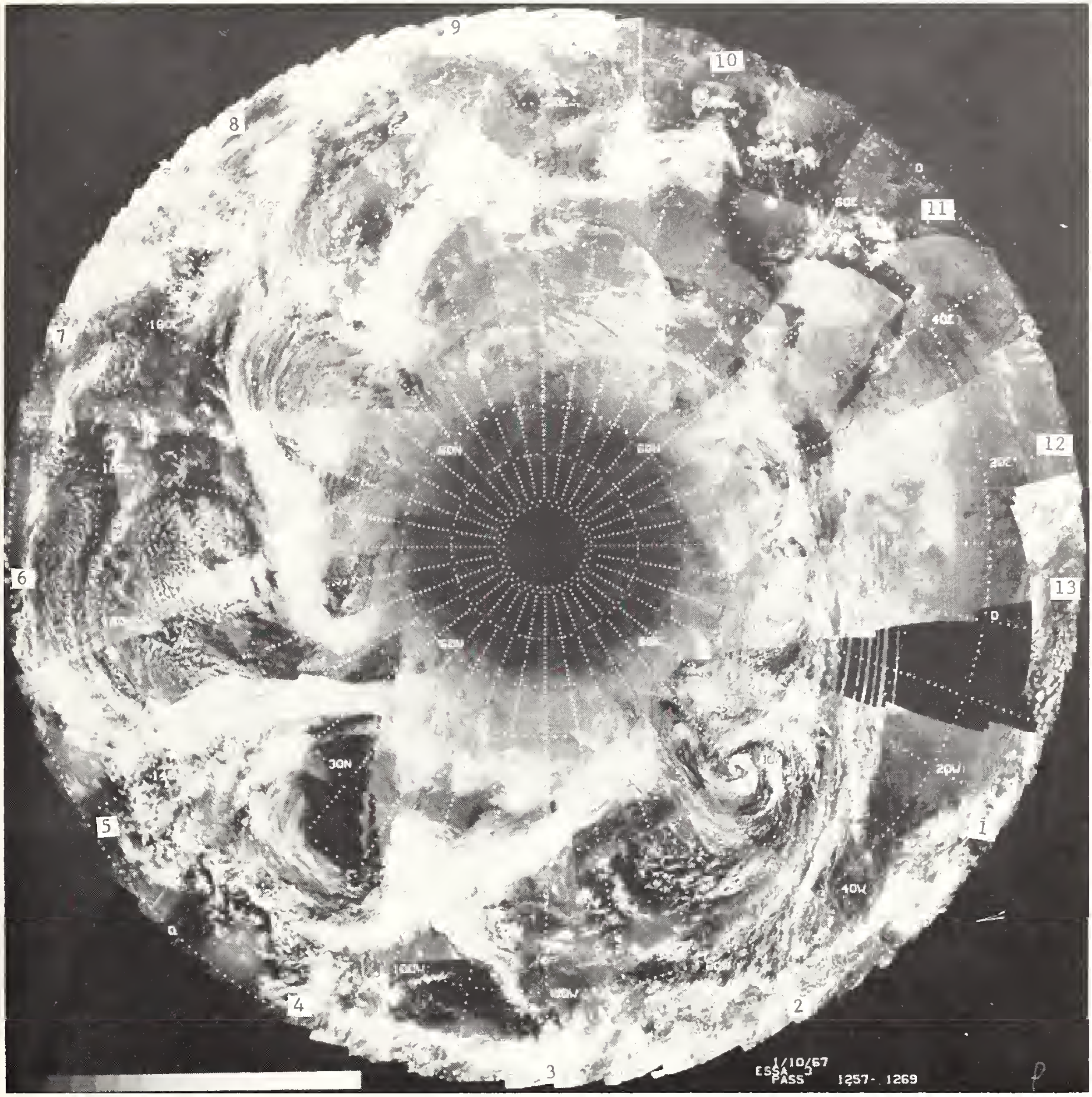
10
1/ 9/67
ESSA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60E
40E
7
160E
12
20E
60N
60N
6
13
60N
60N
0
30N
20W
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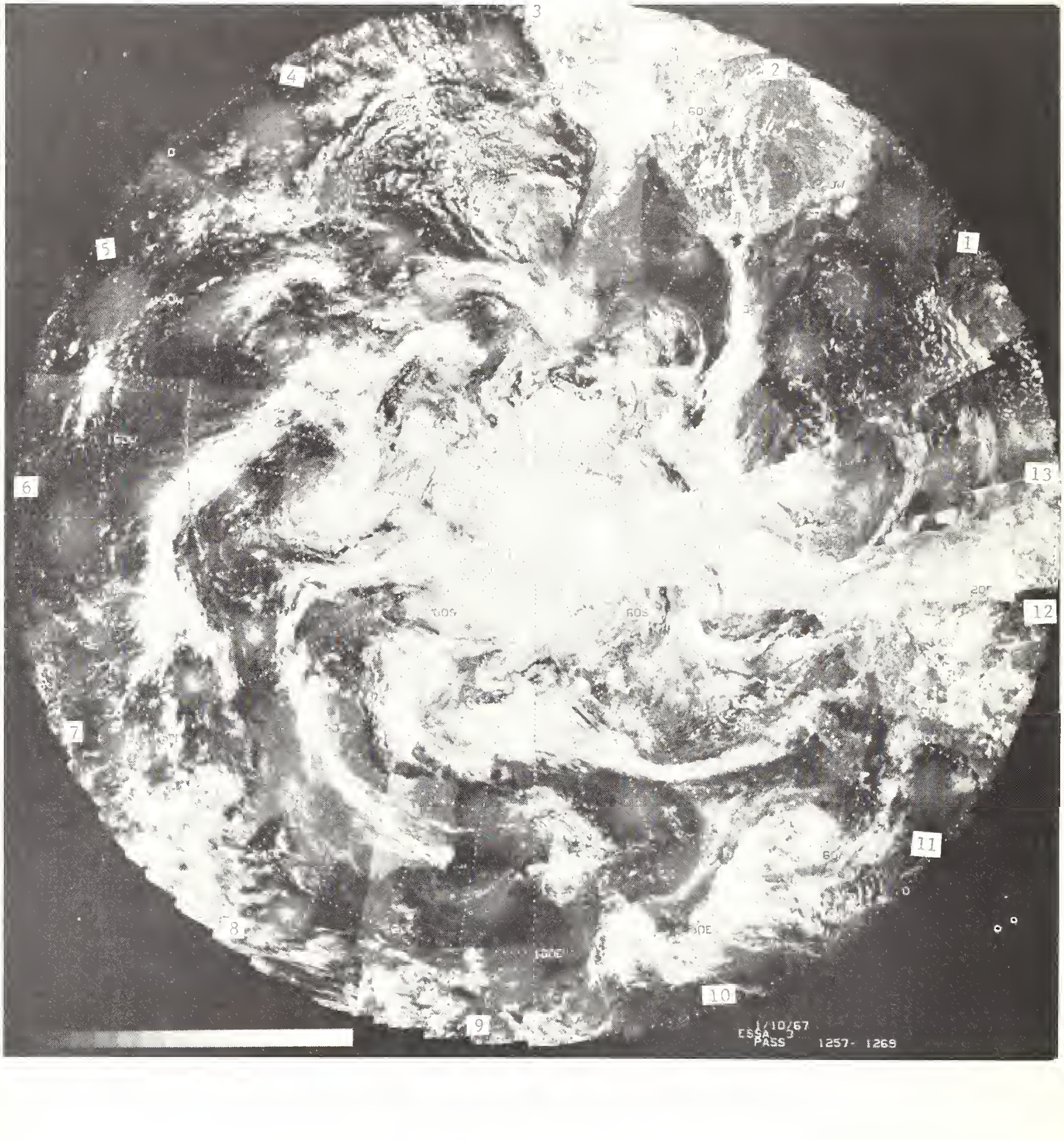
1
40W
0
80W
100W
100W
4
2
3
1/10/67
ESSA 3
PASS 1257- 1269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4
60W
30W
1
5
30
6
120W
13
20E
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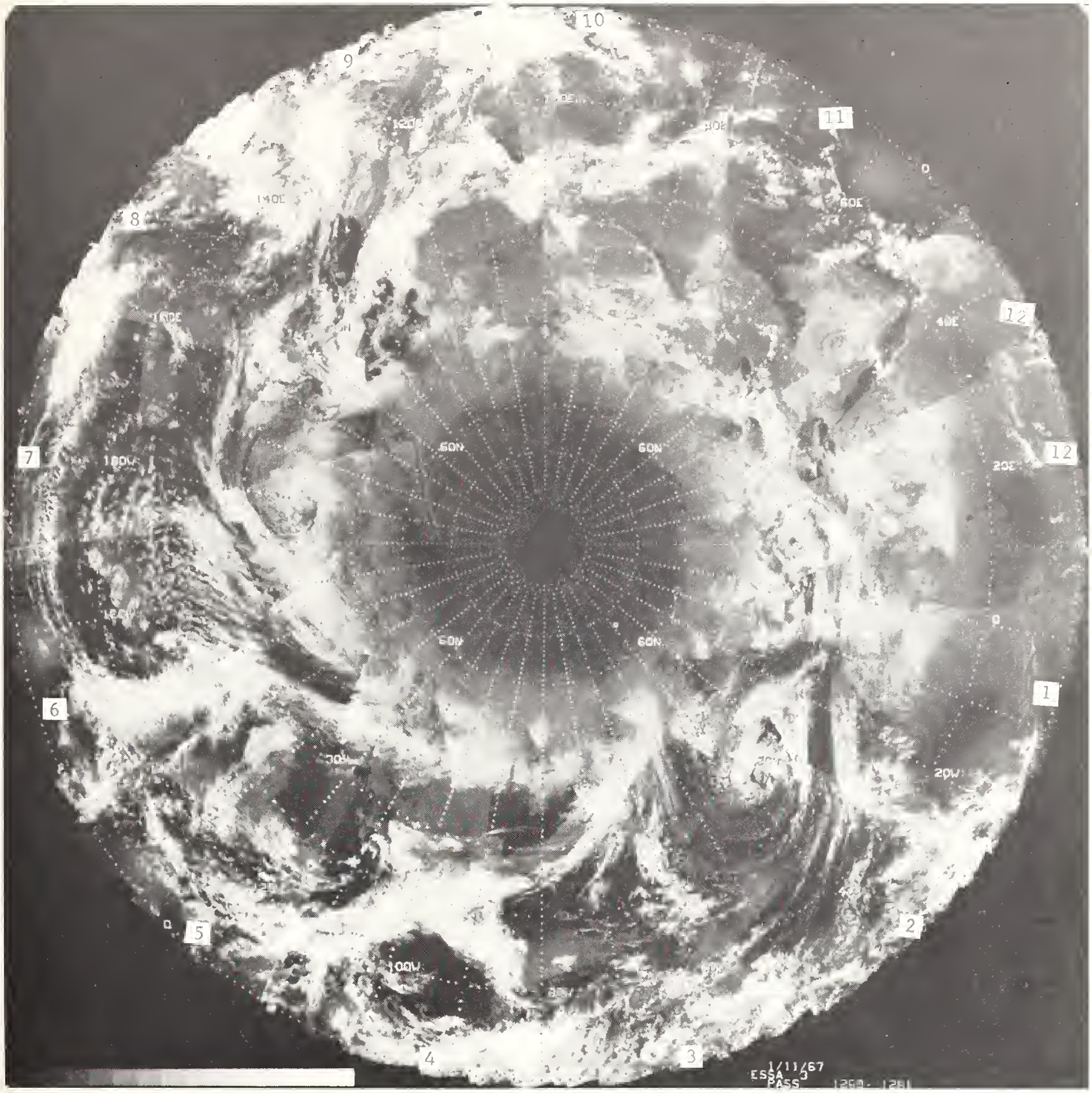
60S
60S
7
11
60
0
8
180E
90E
10
9
1/10/67
ESSA 3
PASS 1257- 1269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80E
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140E
60E
8
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40E
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7
180W
60N
60N
12
20E
160W
0
60N
60N
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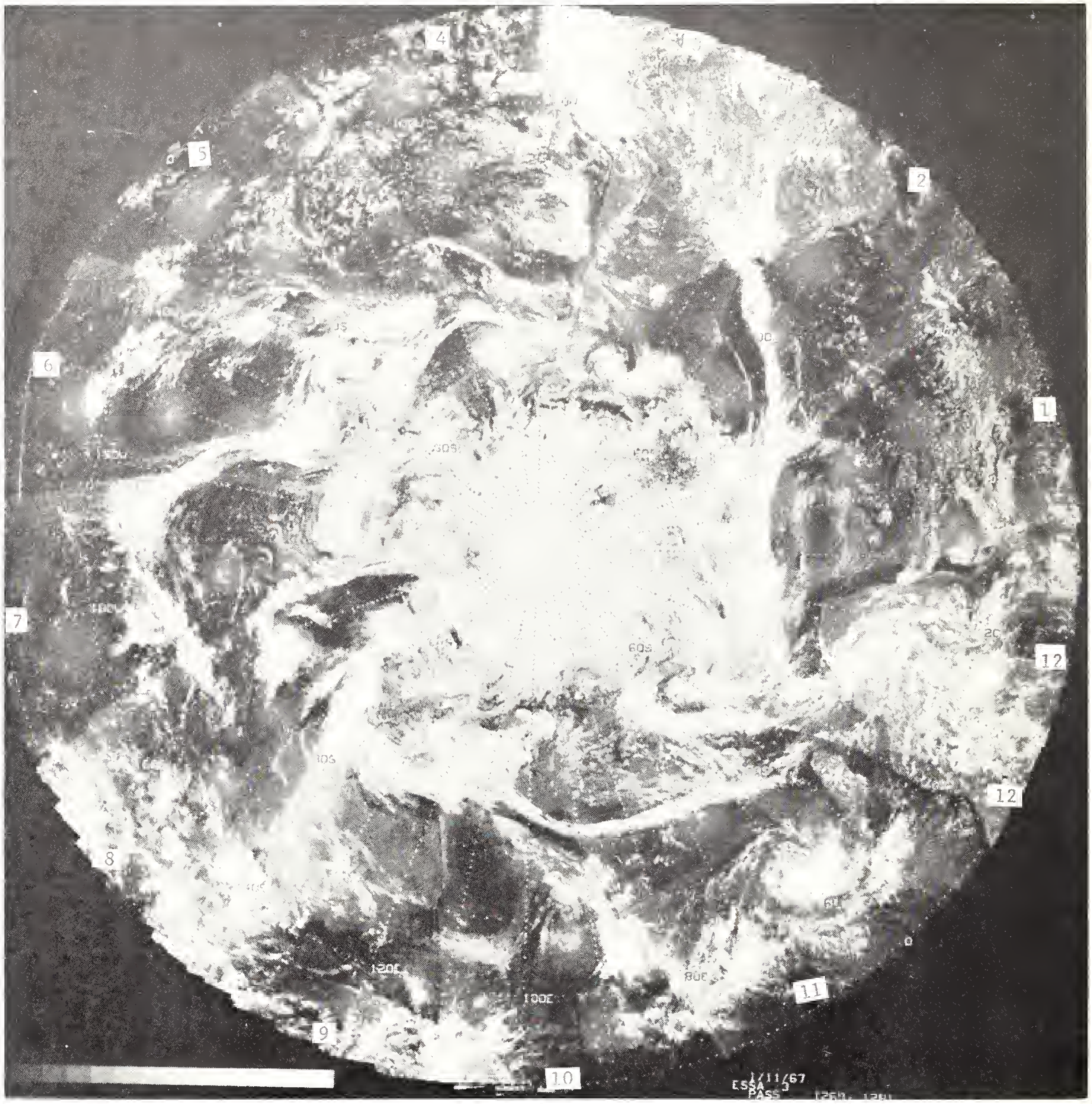
6
20W
140W
0
5
2
100W
80W
4
3
1/11/67
ESSA 3
PASS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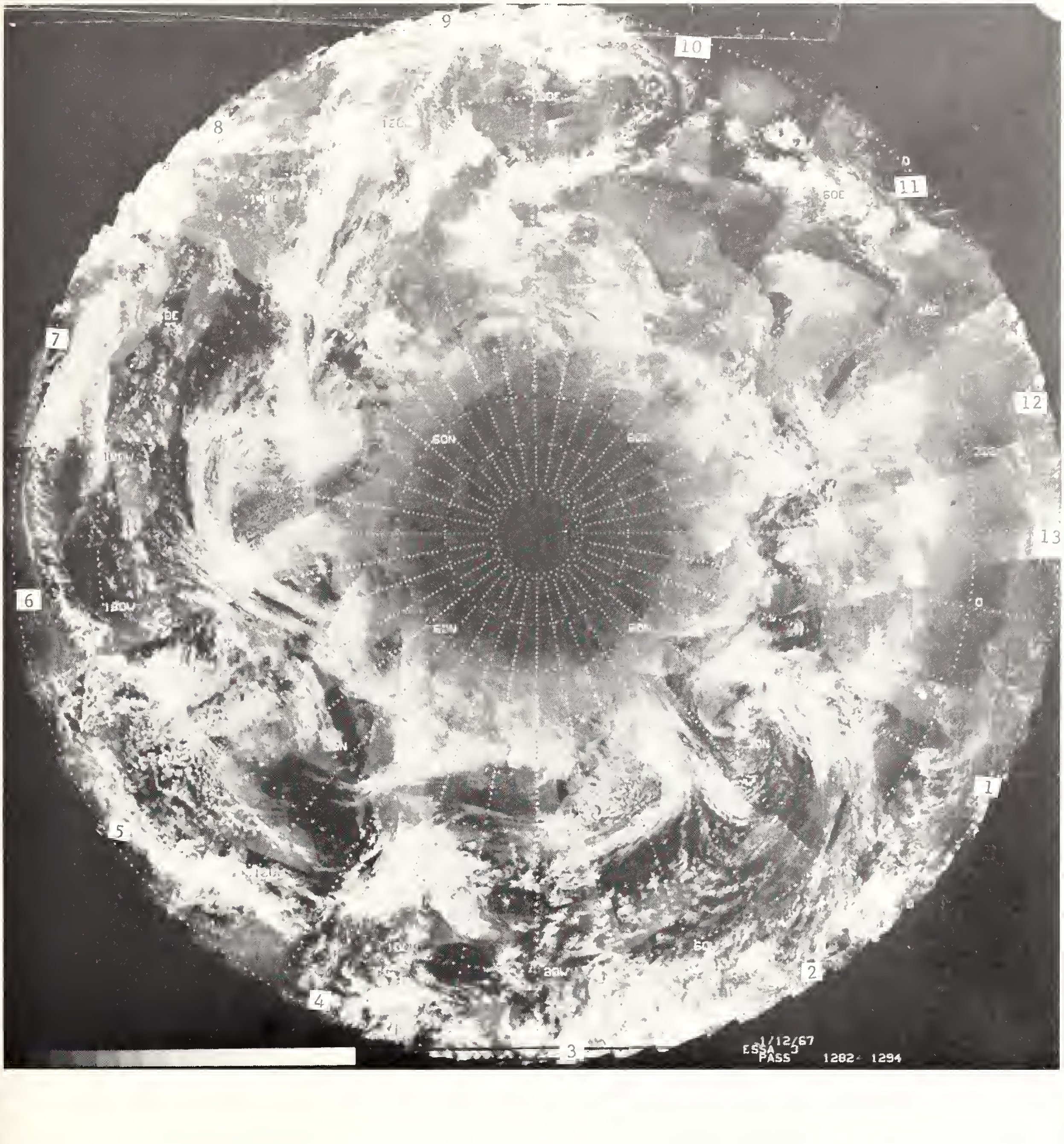
1/11/67
ESSA 3
PASS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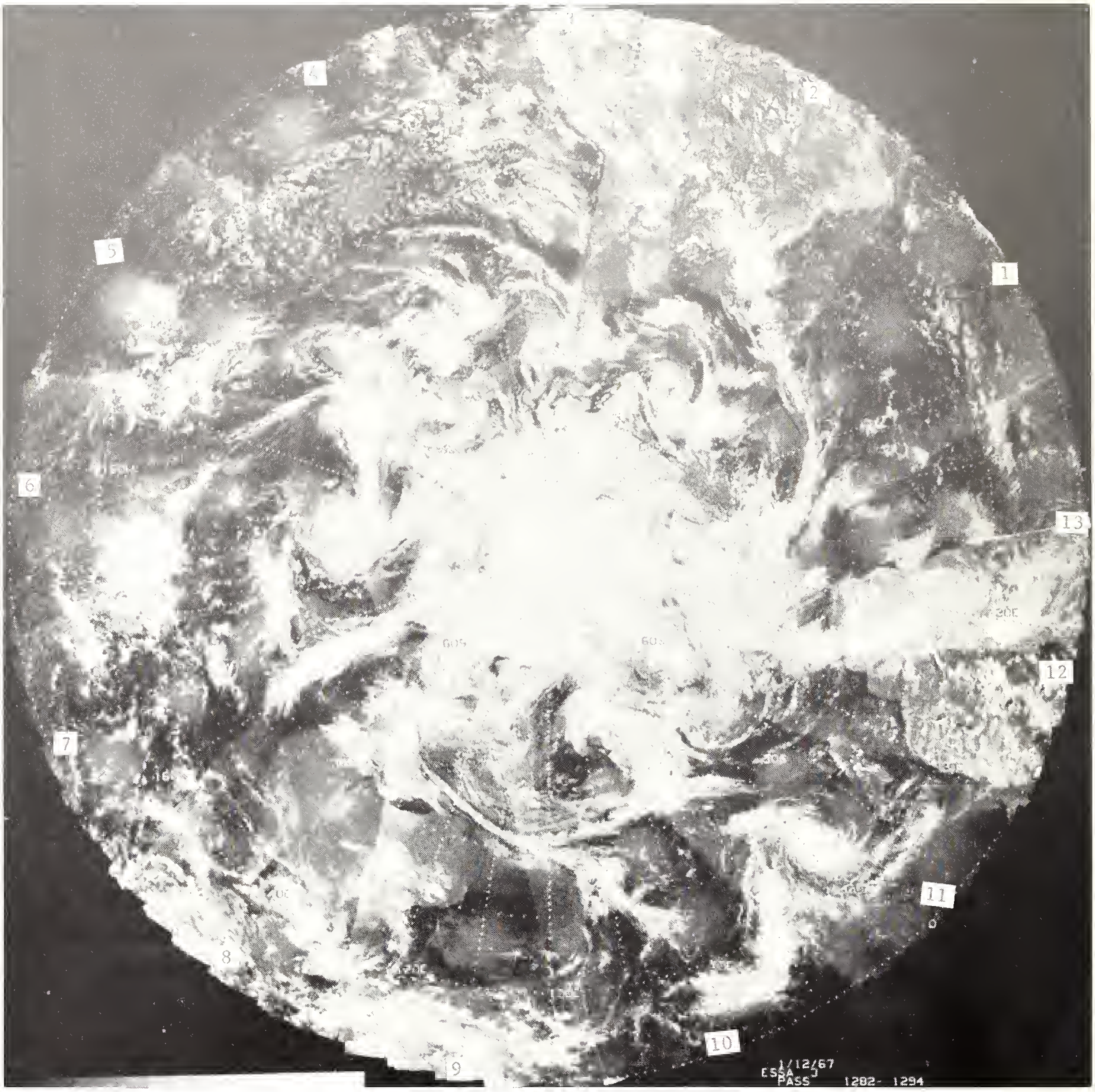
10
8
120E
60E
11
0
7
12
60N
60N
60N
60N
180W
6
13
0
1
5
2
4
3
1/12/67
ESSA 3
PASS 1282- 1294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2
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1
6
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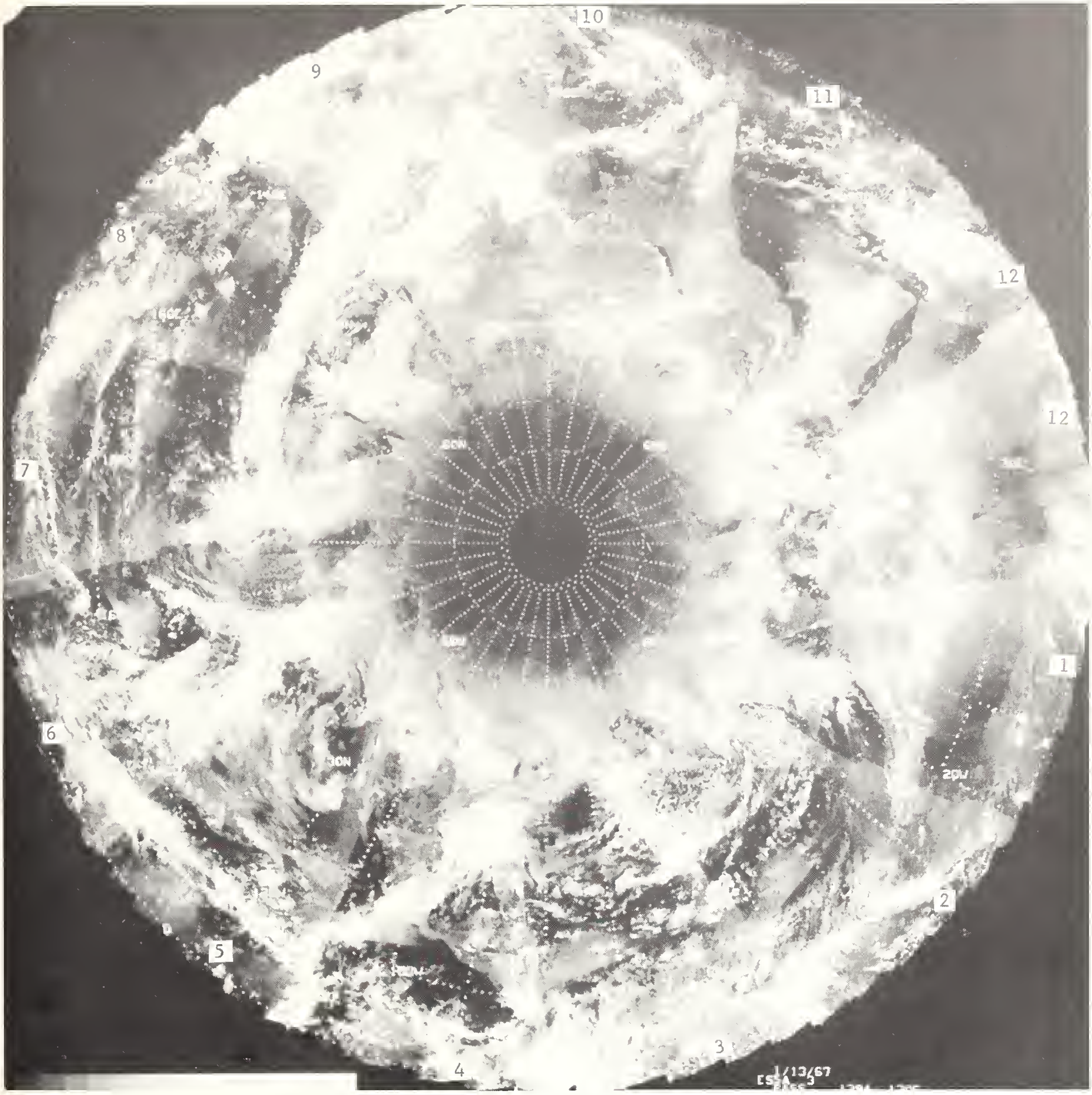
20E
60S
60S
12
7
11
8
10
9
1/12/67
ESSA 3
PASS 1282- 1294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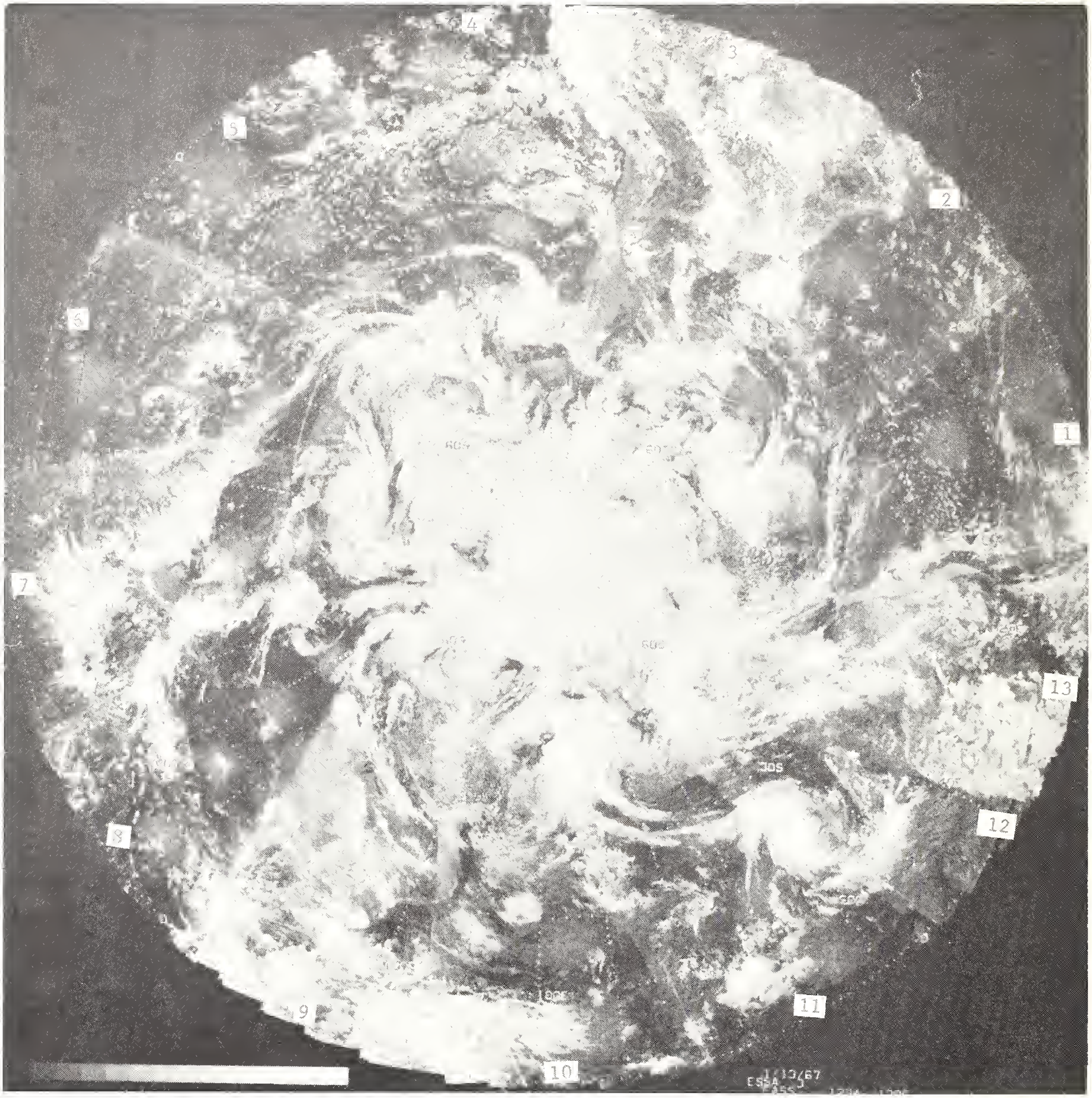
8
12
12
7
1
6
20W
2
5
3
4
1/13/67
ESSA 3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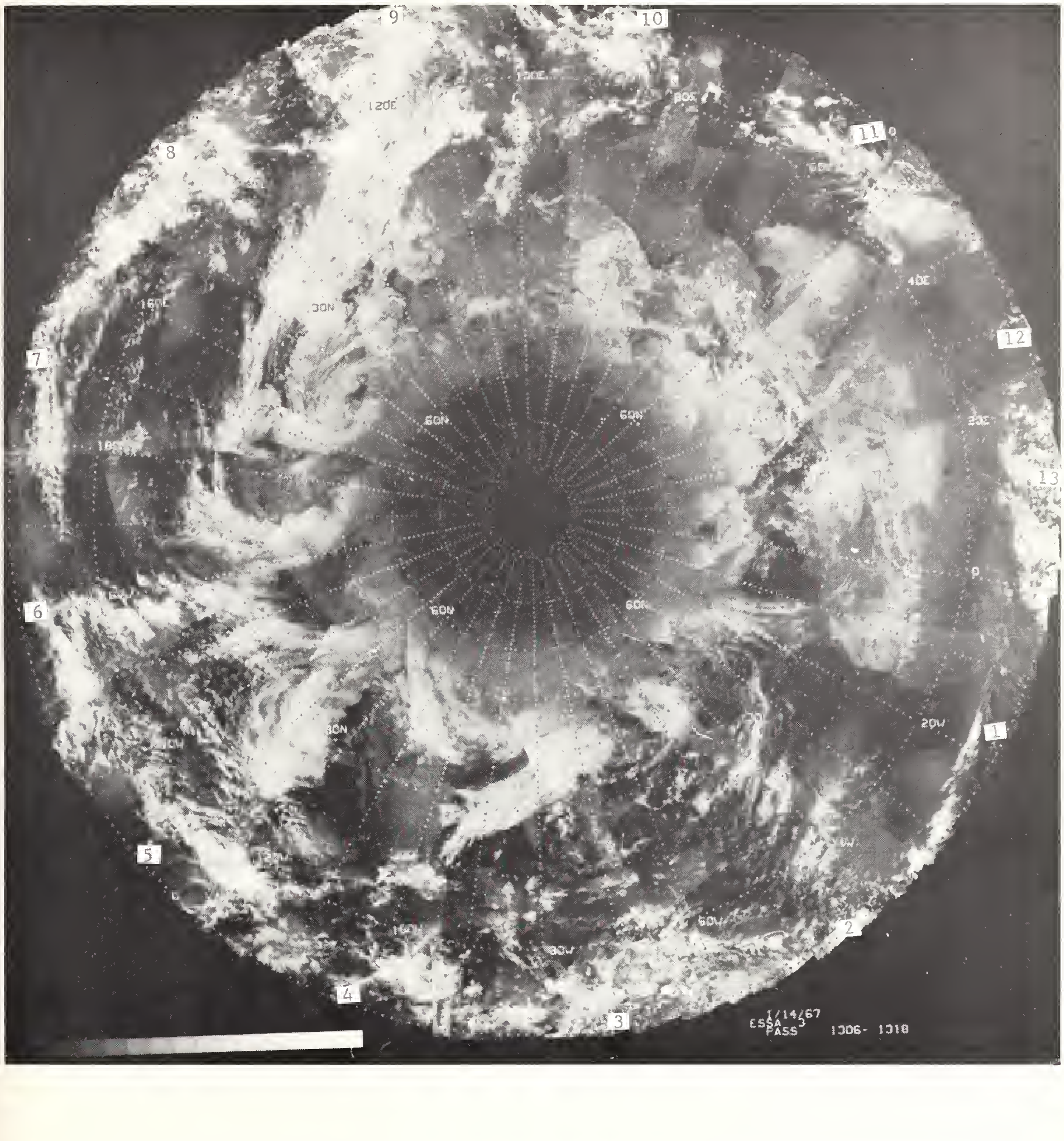
2
6
1
7
13
30S
12
8
11
9
10
1/13/67
ESSA 3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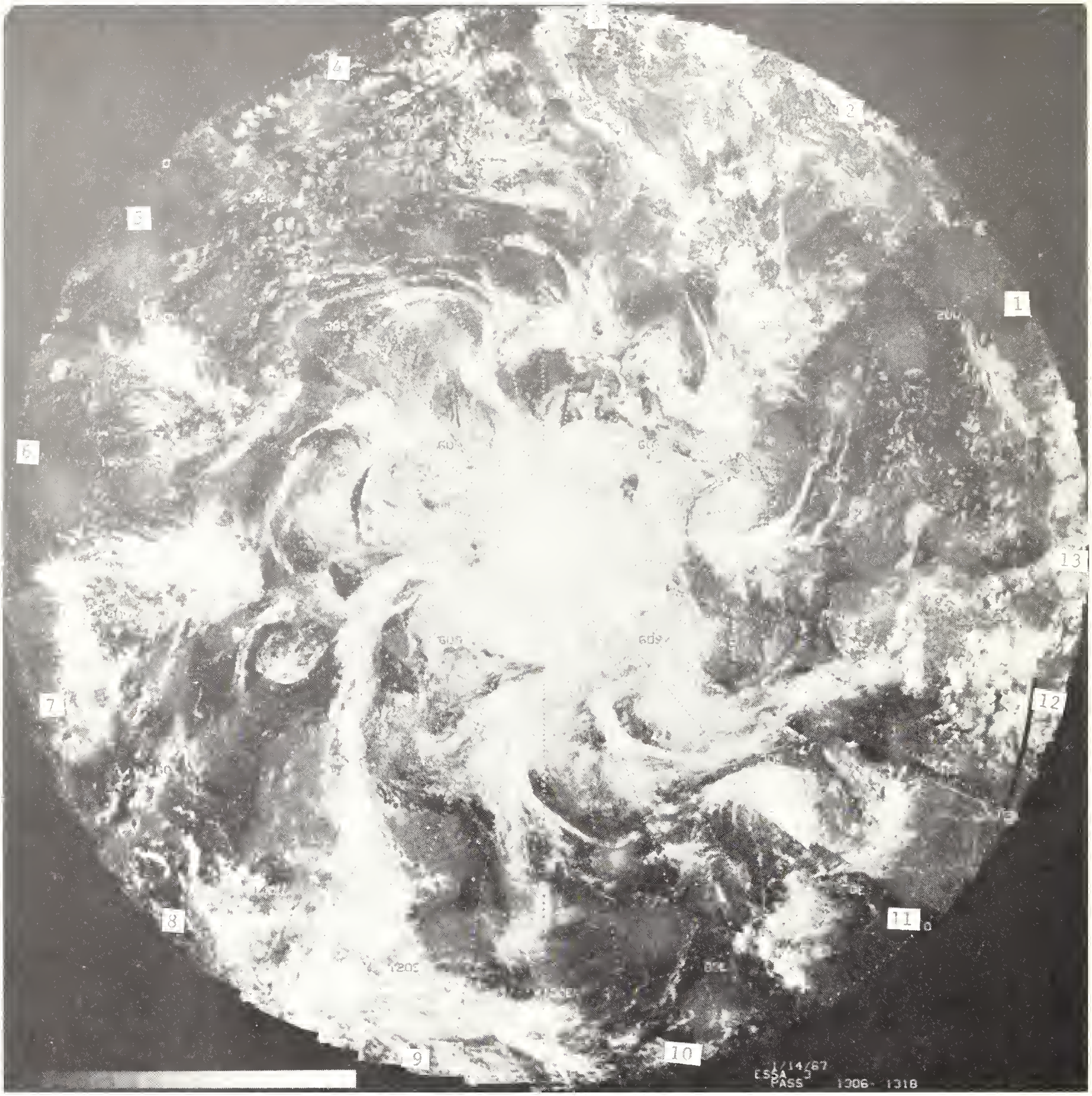
10
120E
80E
11
0
40E
12
20E
13
0
20W
1
40W
60W
2
80W
100W
3
4
5
6
7
180
160E
8
30N
60N
60N
60N
60N
30N
1/14/67
ESSA 3
PASS
1306- 1318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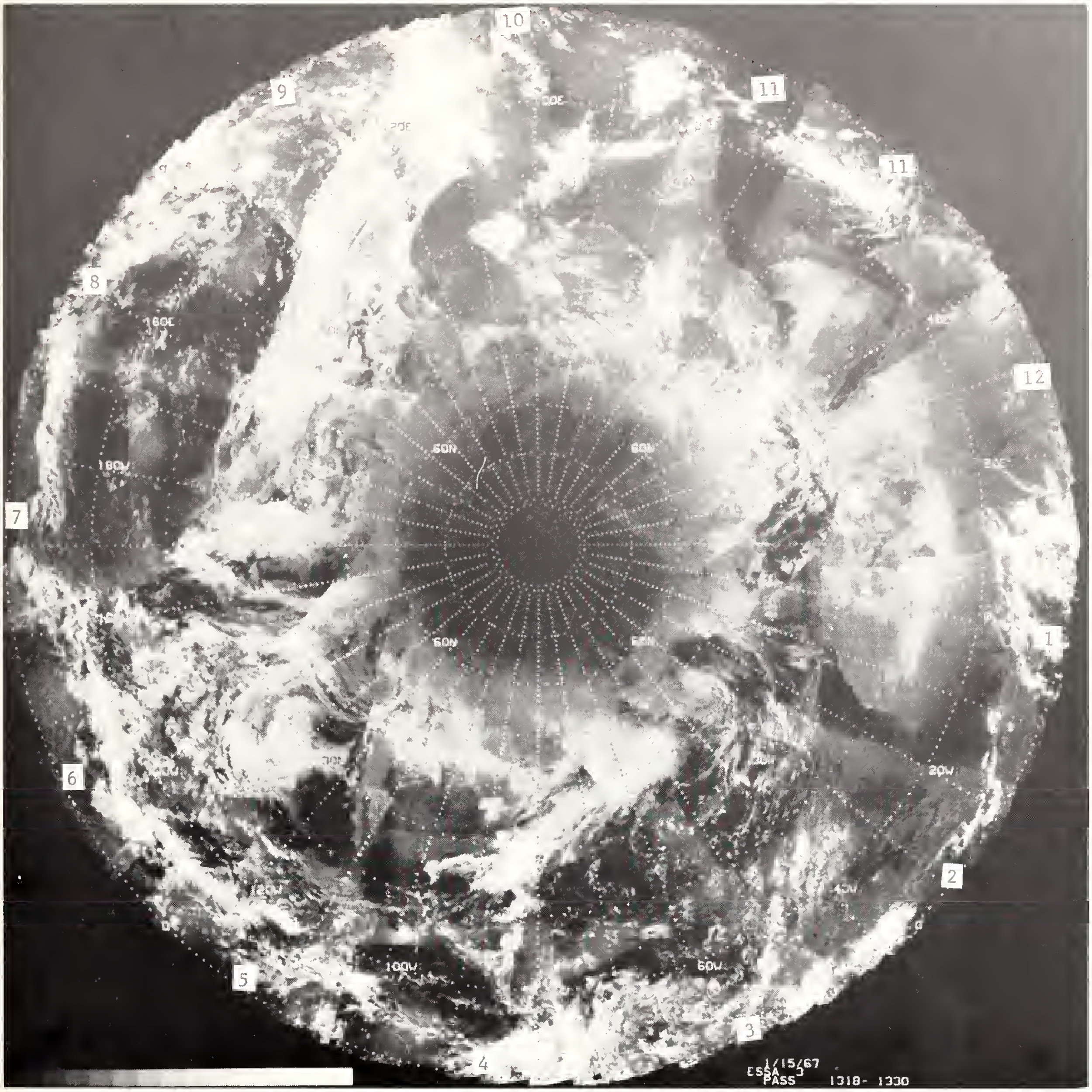
9
10
1/14/67
ESSA 3
PASS 1306- 1318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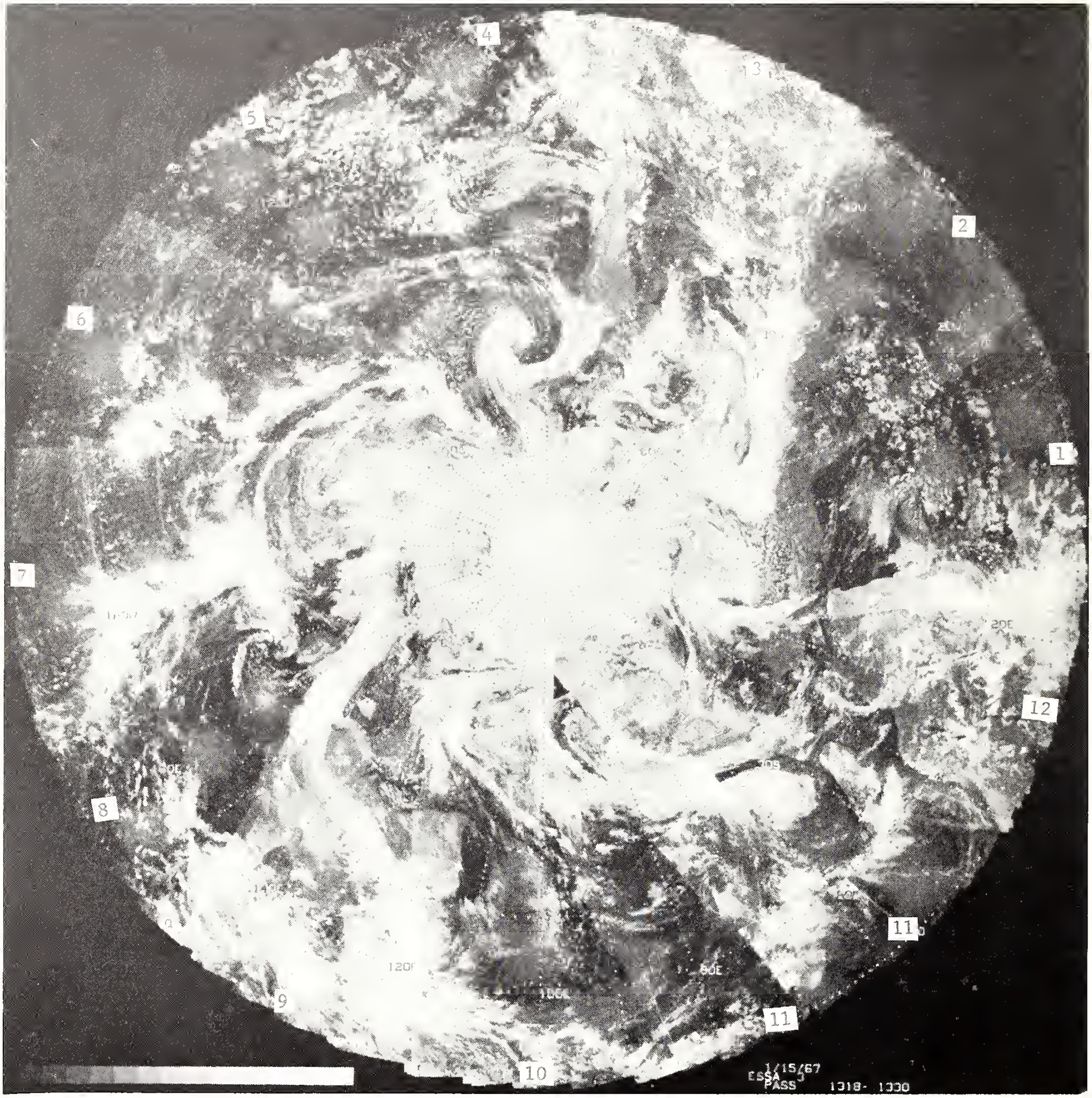
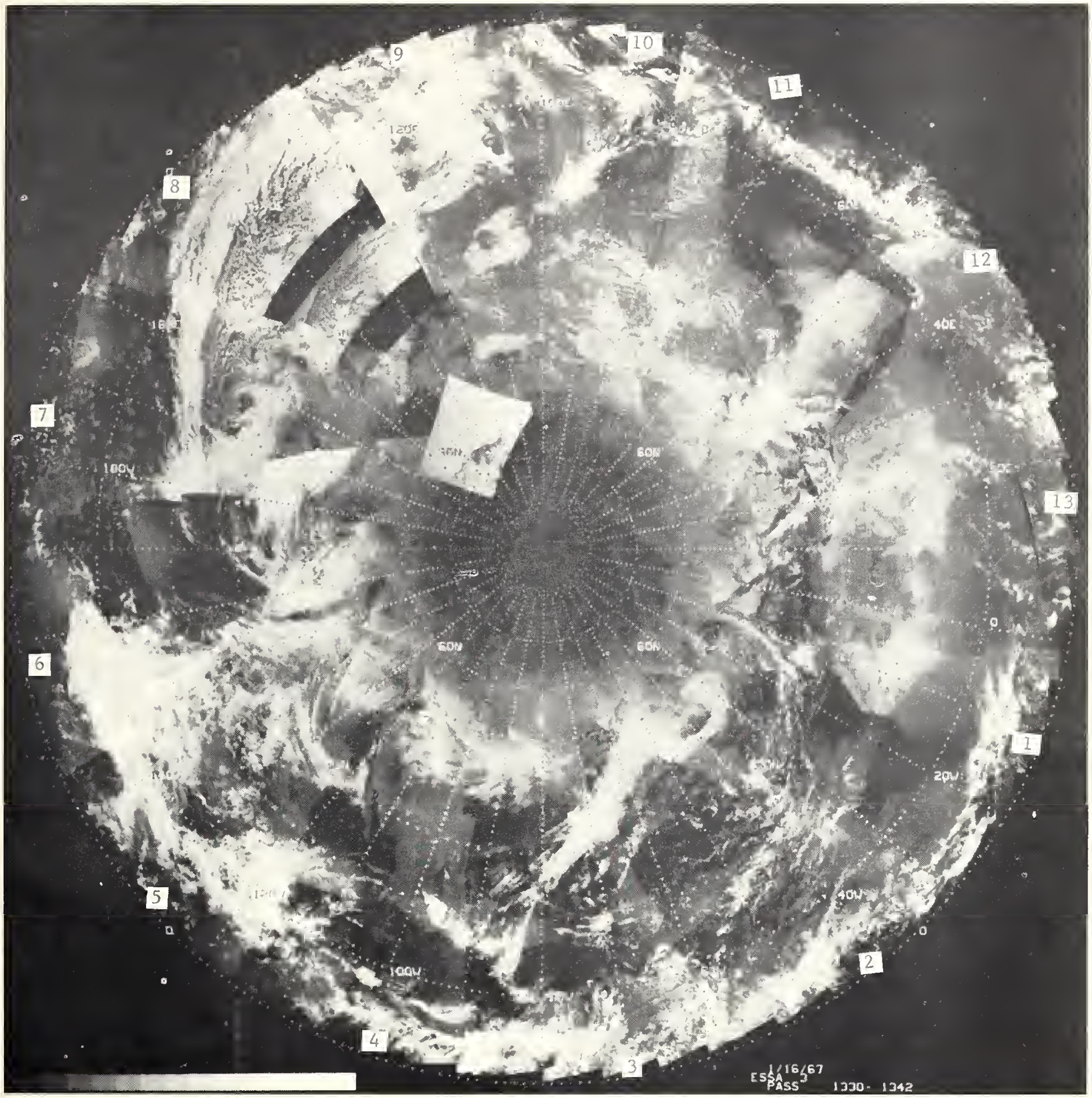
9
11
30E
11
8
160E
12
60N
60N
180W
7
60N
60N
20E
1
6
20W
2
40W
100W
60W
5
3
4
1/15/67
ESSA 3
PASS 1318- 1330


4
13
5
2
6
1
7
20E
12
8
11
9
1200
60E
100E
11
10
1/15/67
ESSA 3
PASS 1318- 1330



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6
1
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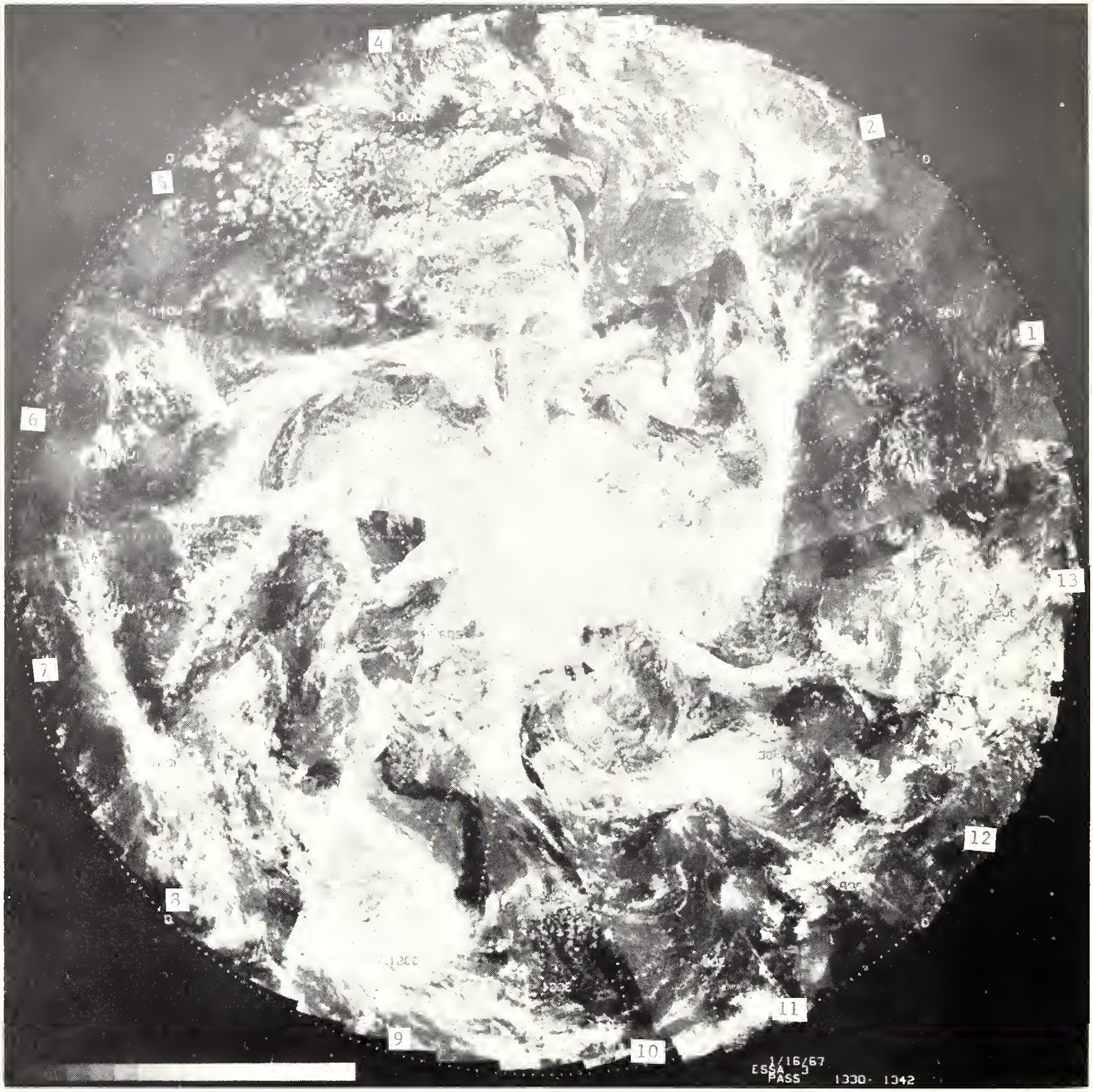
4
3
120E
160E
180W
40E
60N
60N
60N
60N
0
20W
40W
100W
0
1/16/67
ESSA 3
PASS 1330- 1342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12
8
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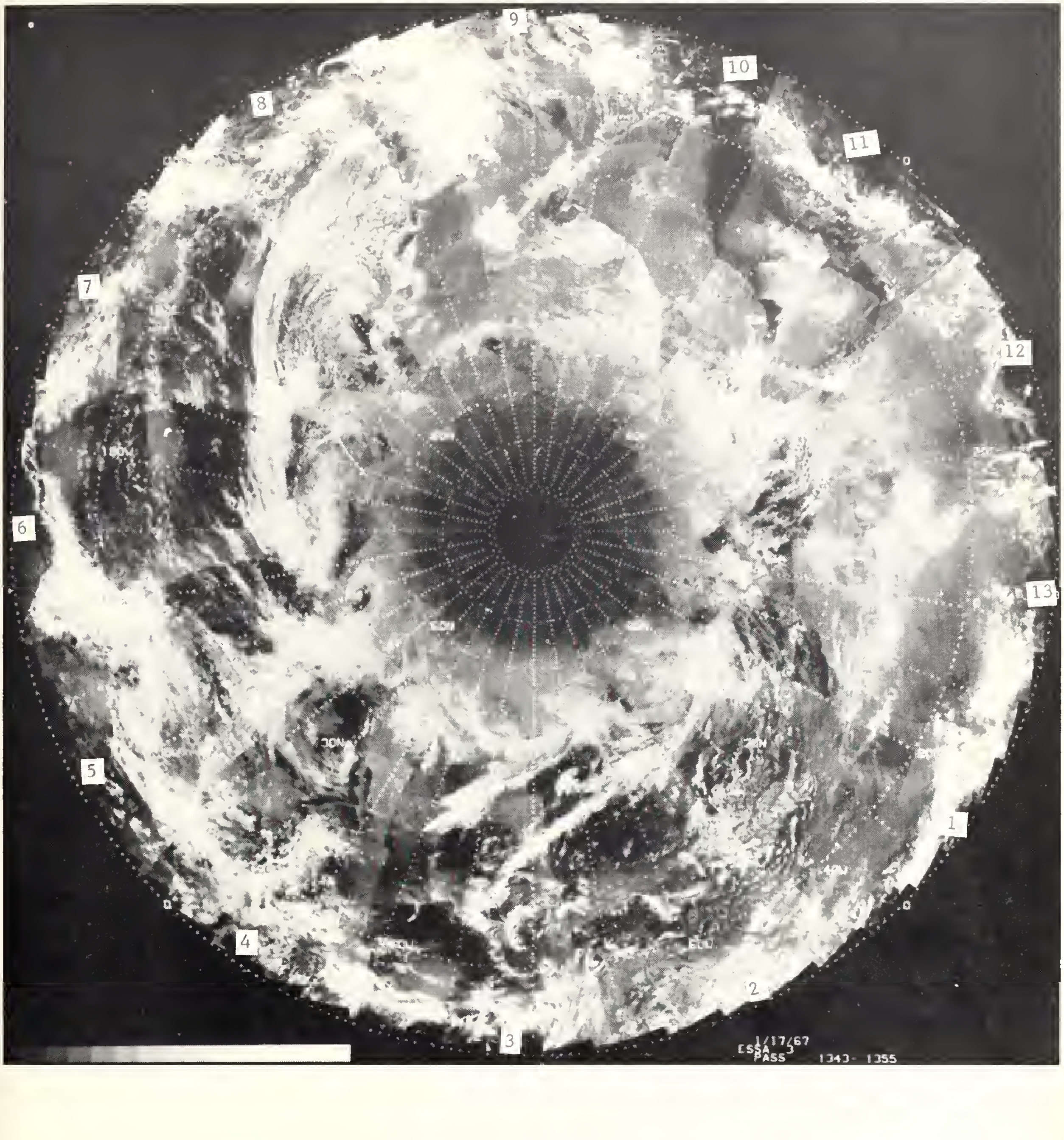
9
10
1/16/67
ESSA 3
PASS 1330- 1342


9
10
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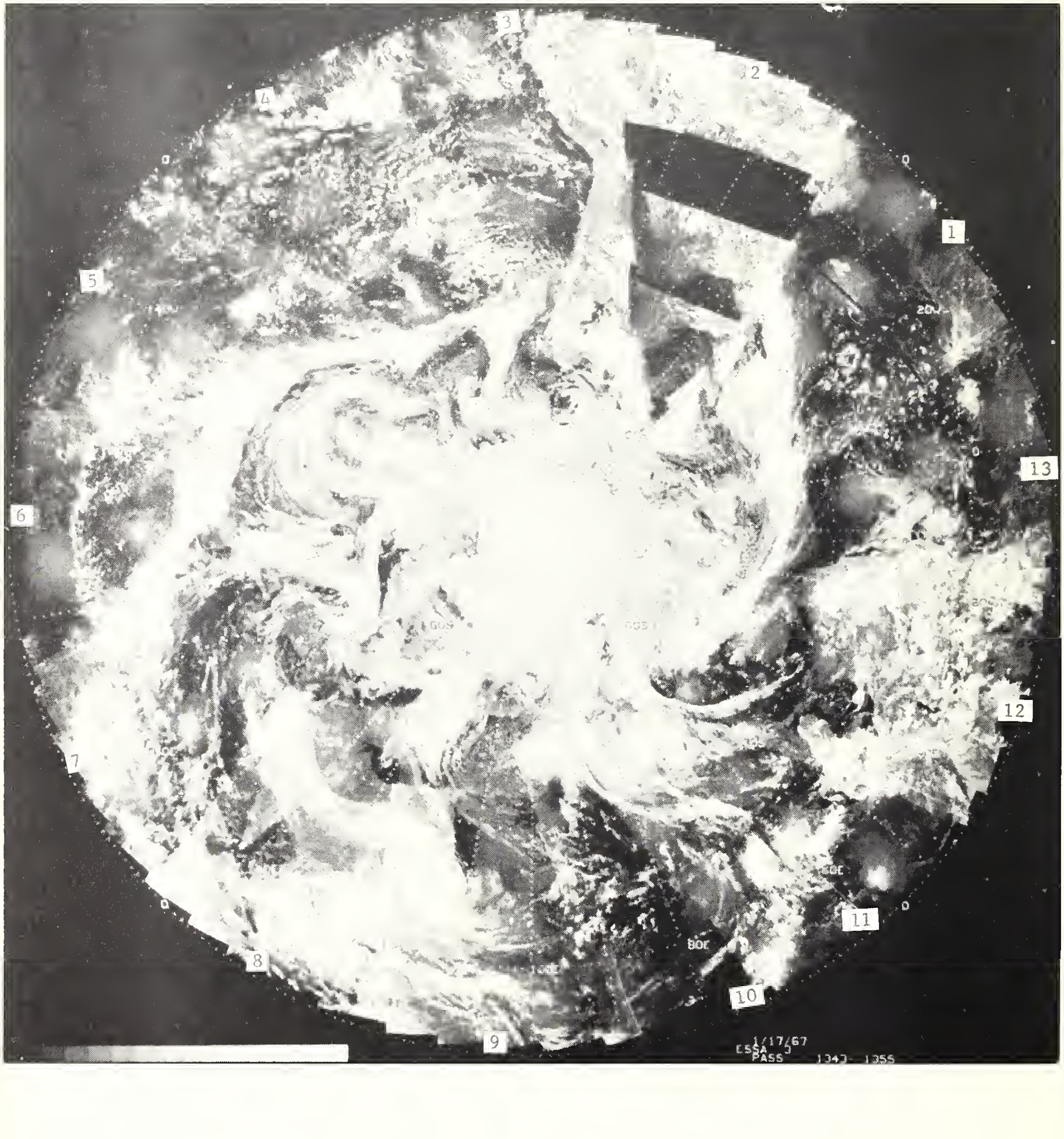
11
7
12
180W
6
13
30N
5
1
4
2
3
1/17/67
ESSA 3
PASS 1343- 1355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13
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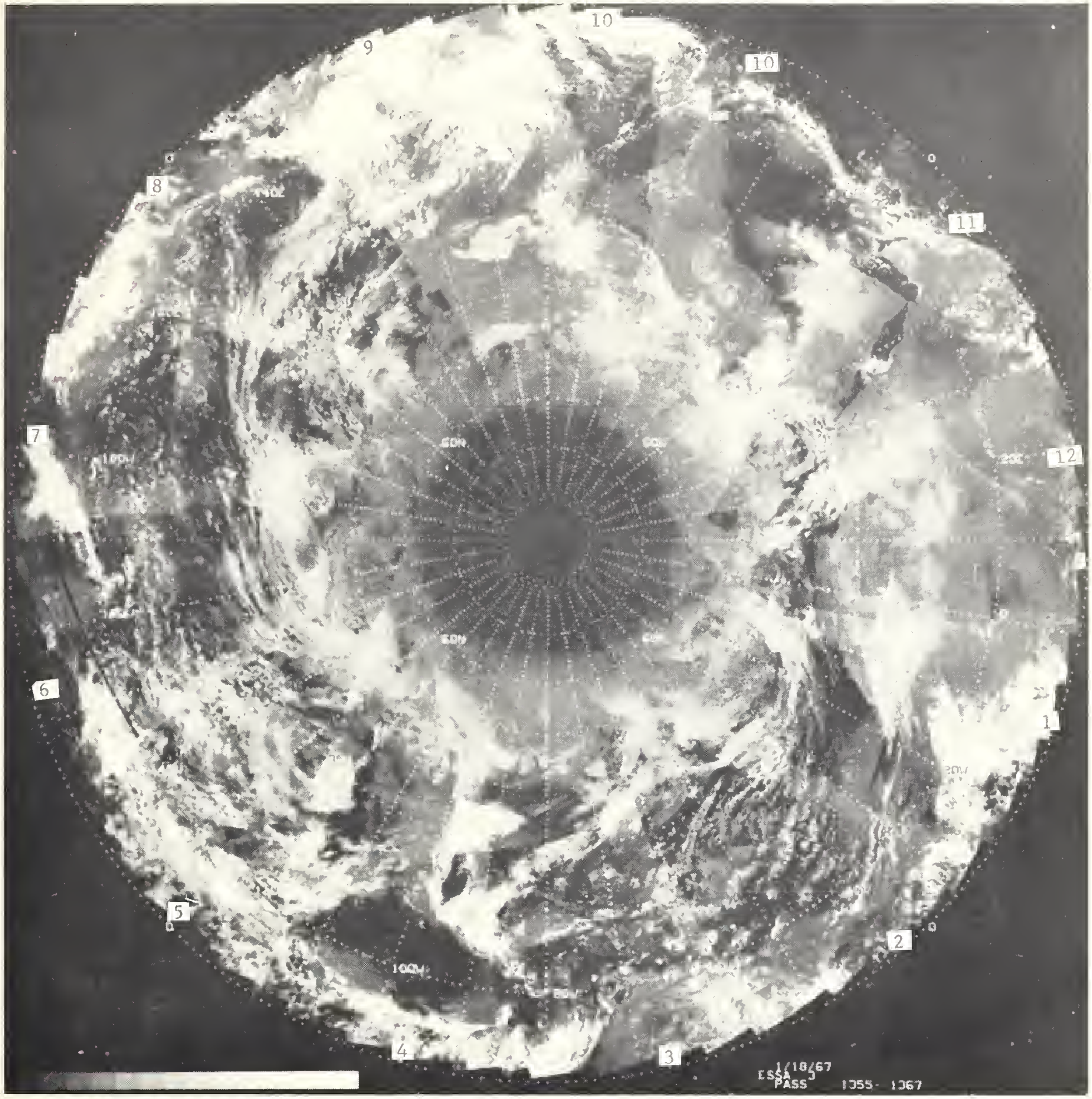
12
7
11
8
10
9
1/17/67
ESSA 3
PASS 1343- 1355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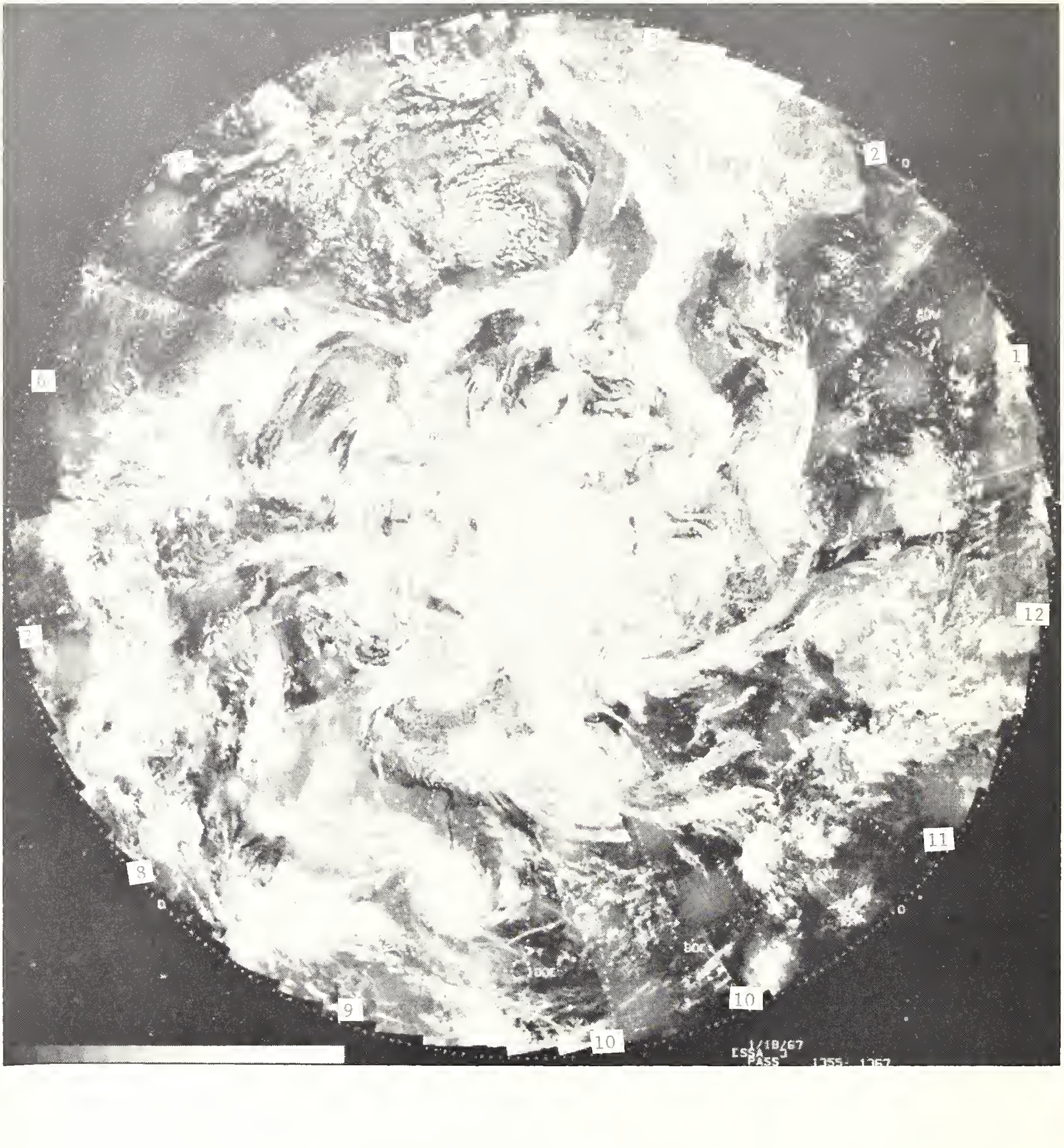
9
10
8
11
7
100W
60N
60N
20E
12
6
60N
1
20W
5
2
100W
60N
4
3
1/18/67
ESSA 3
PASS 1355- 1367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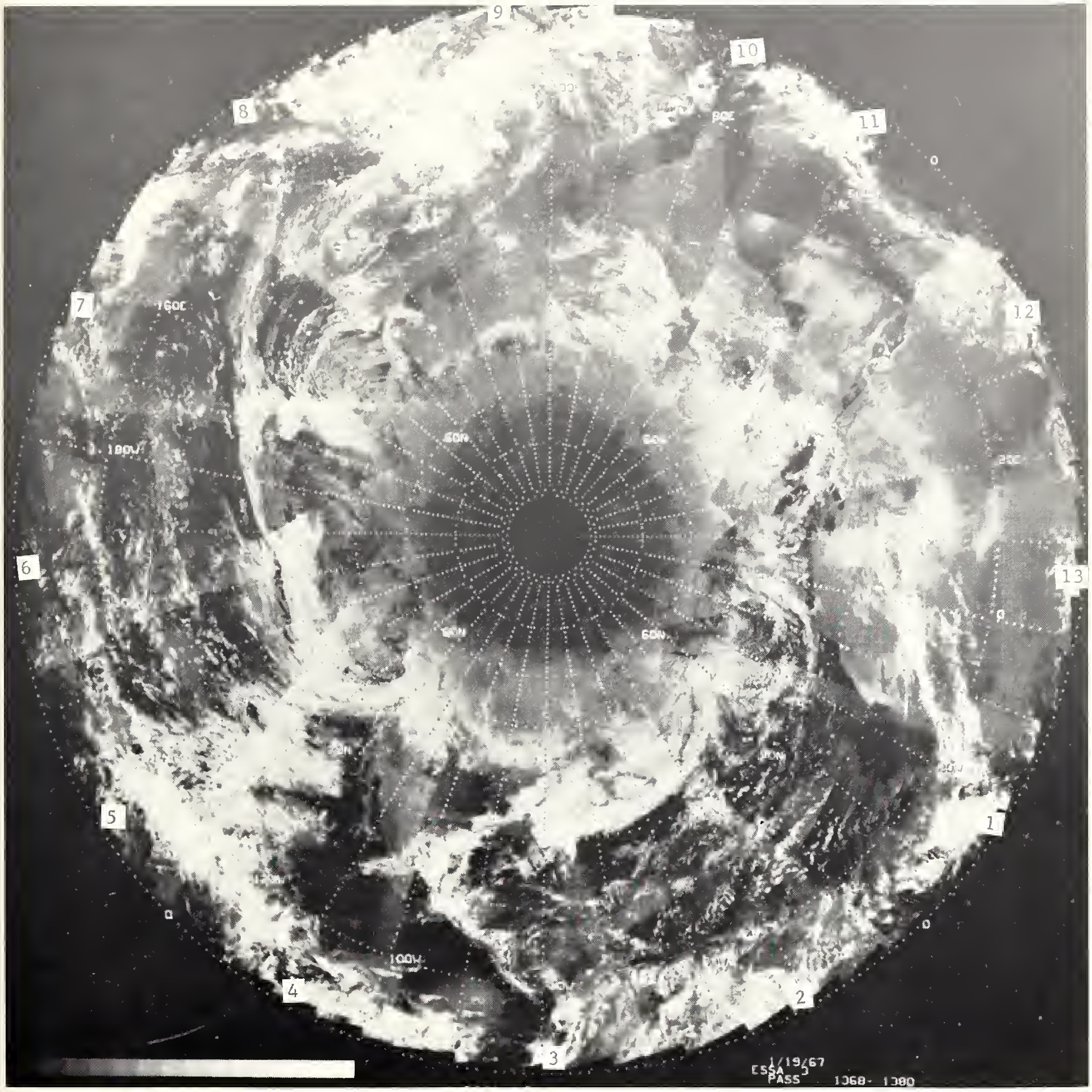
1
80W
12
11
10
80E
10
9
8
7
6
1/18/67
ESSA 3
PASS 1355- 1367



9
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80E
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160E
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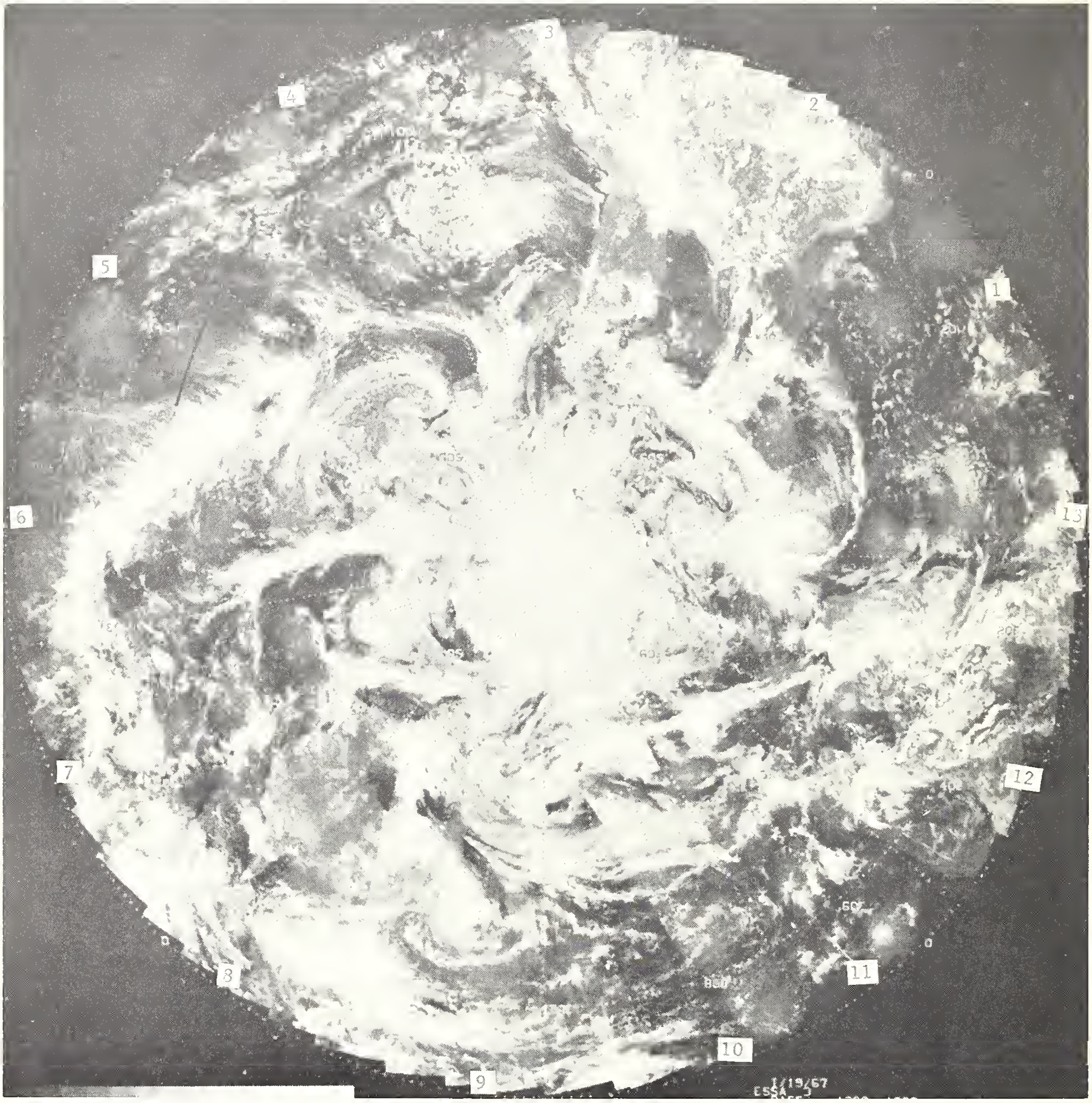
180W
60N
60N
20E
6
13
0
60N
60N
5
1
0
100W
0
4
2
3
1/19/67
ESSA 3
PASS 1068- 1080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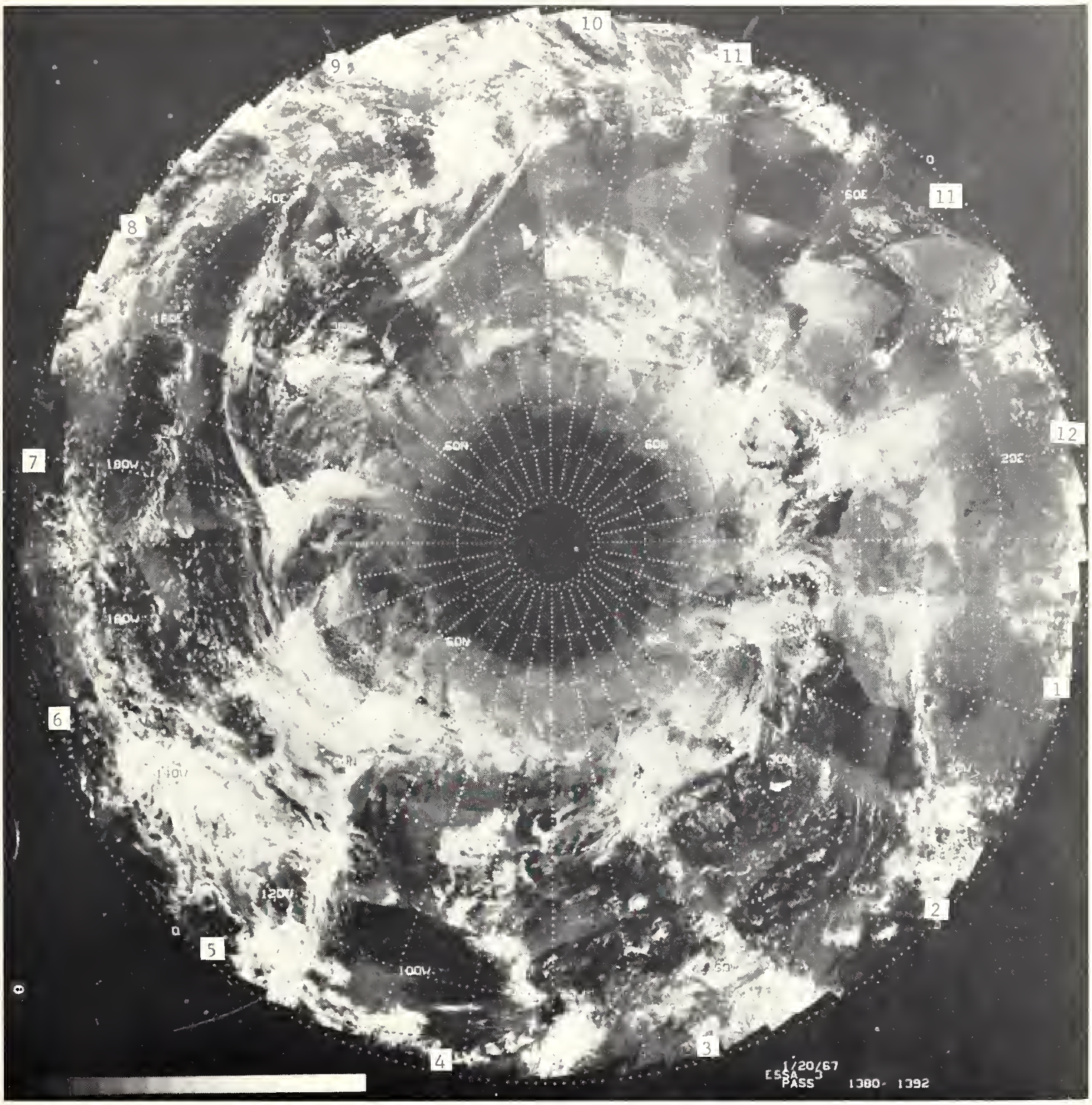
4
2
5
1
6
13
7
12
8
11
10
9
1/19/67
ESSA 3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9
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4
3
60N
60N
60N
30N
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160W
140W
120W
100W
160E
140E
60E
20E
40W
1/20/67
ESSA 3
PASS 1380- 1392

4
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2
6
1
7
12
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11
9
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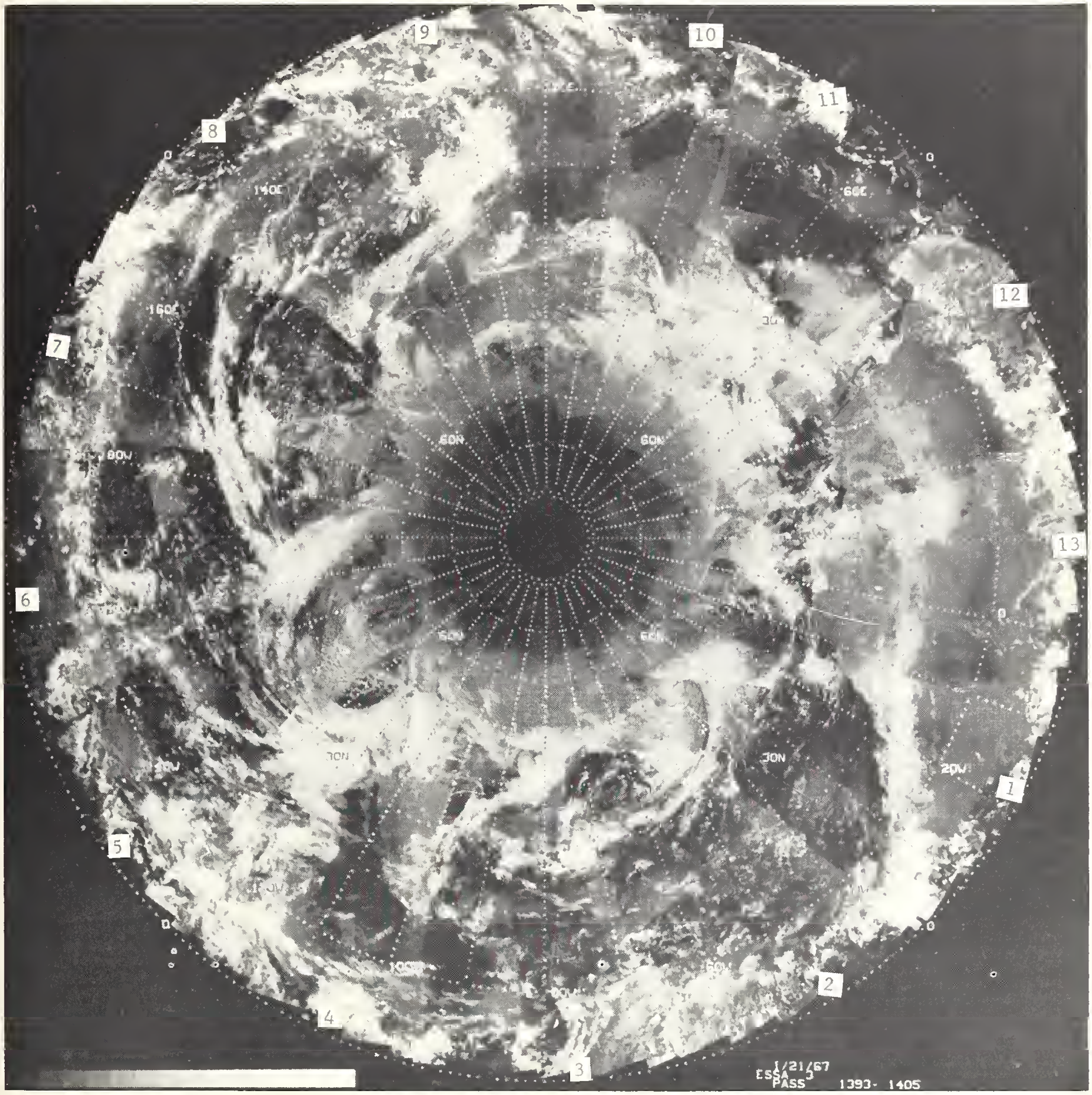
10
1/20/67
ESSA 3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2
4
3
140E
160E
180E
160E
60E
30E
80W
60N
60N
60N
60N
30N
30N
20W
20W
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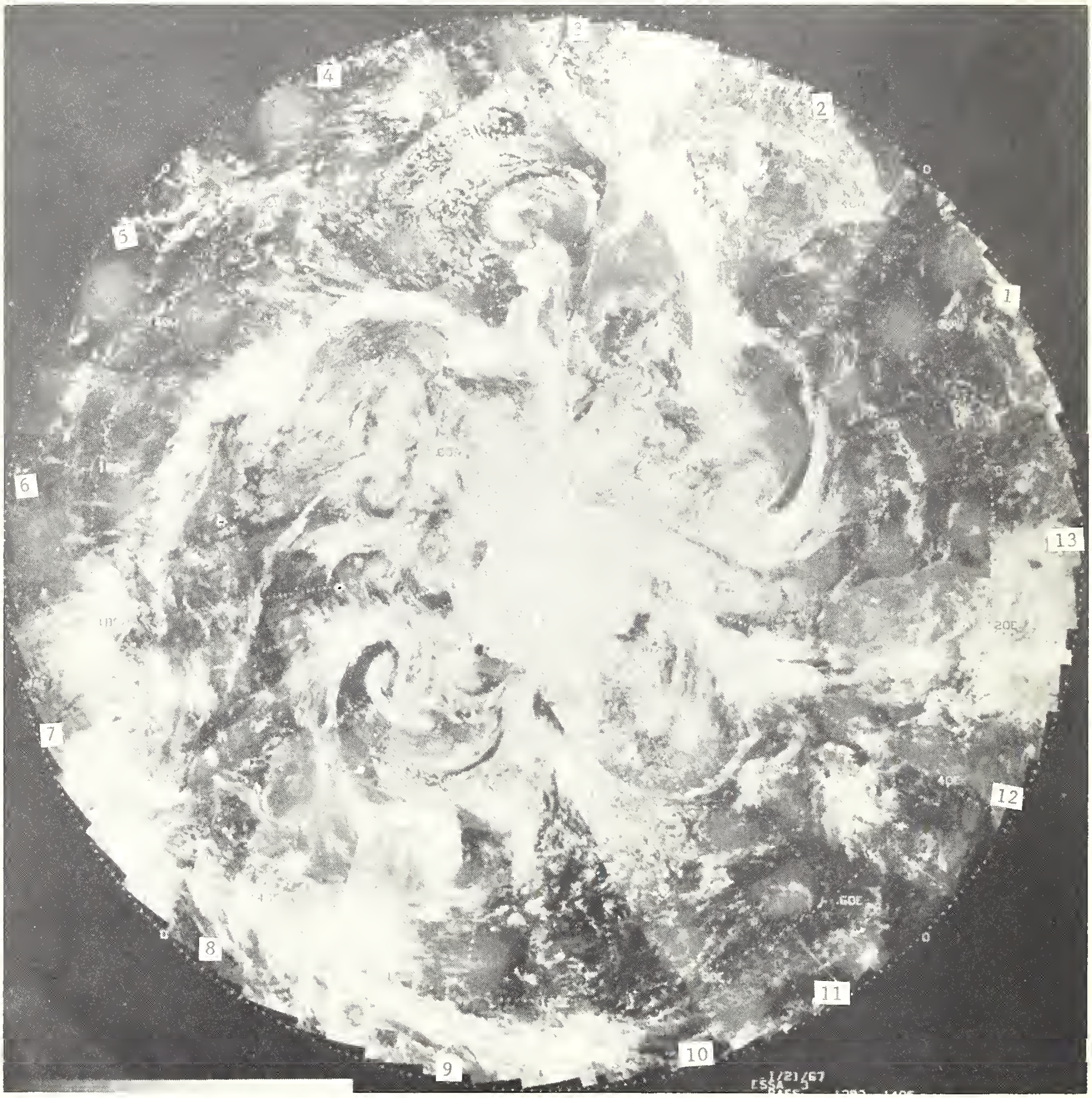
100W
80W
60W
1/21/67
ESSA 3
PASS 1393- 1405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20E
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40E
12
60E
8
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9
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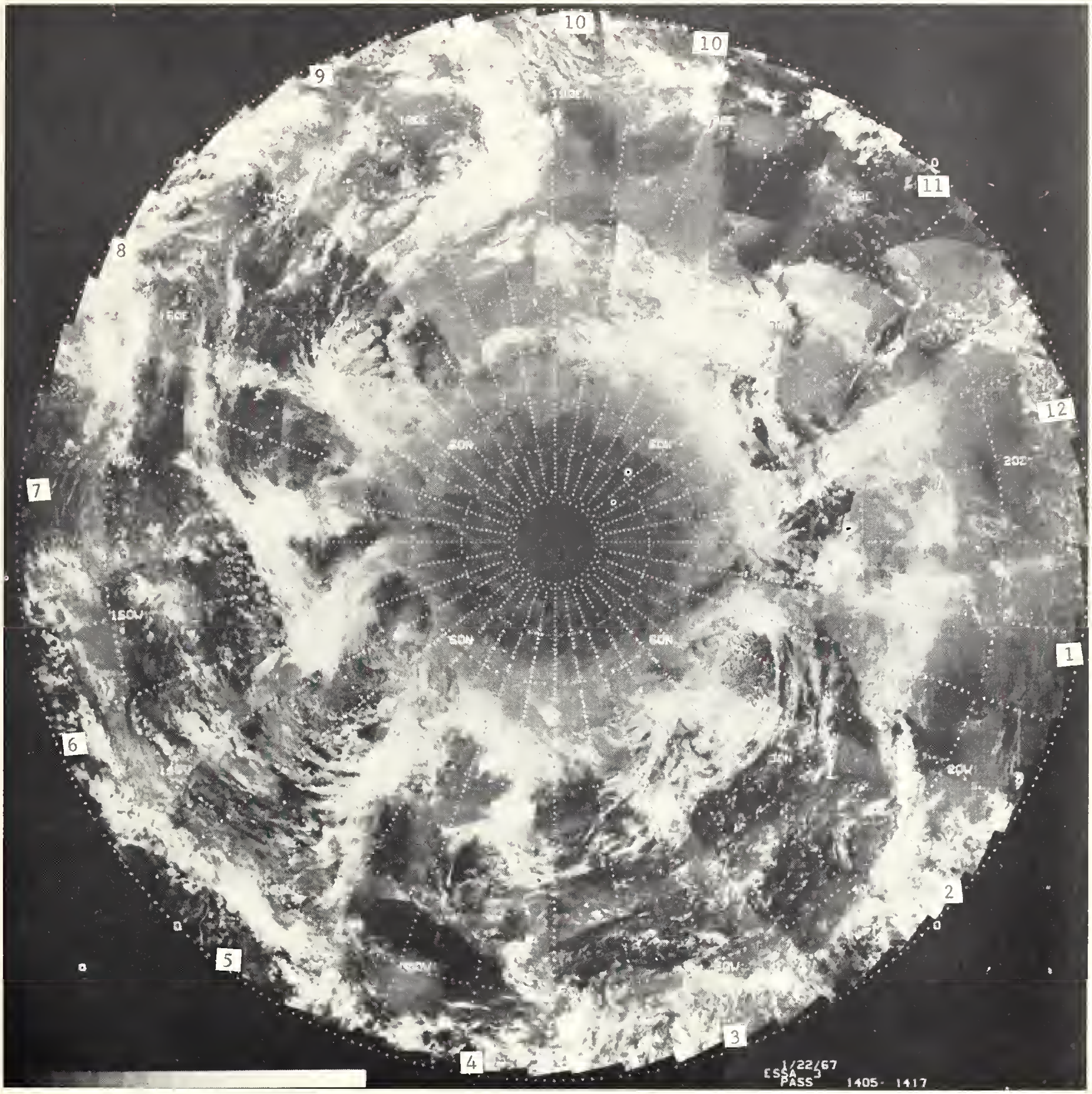
1/21/67
ESSA 3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11
8
12
60N
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60N
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150W
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60W
6
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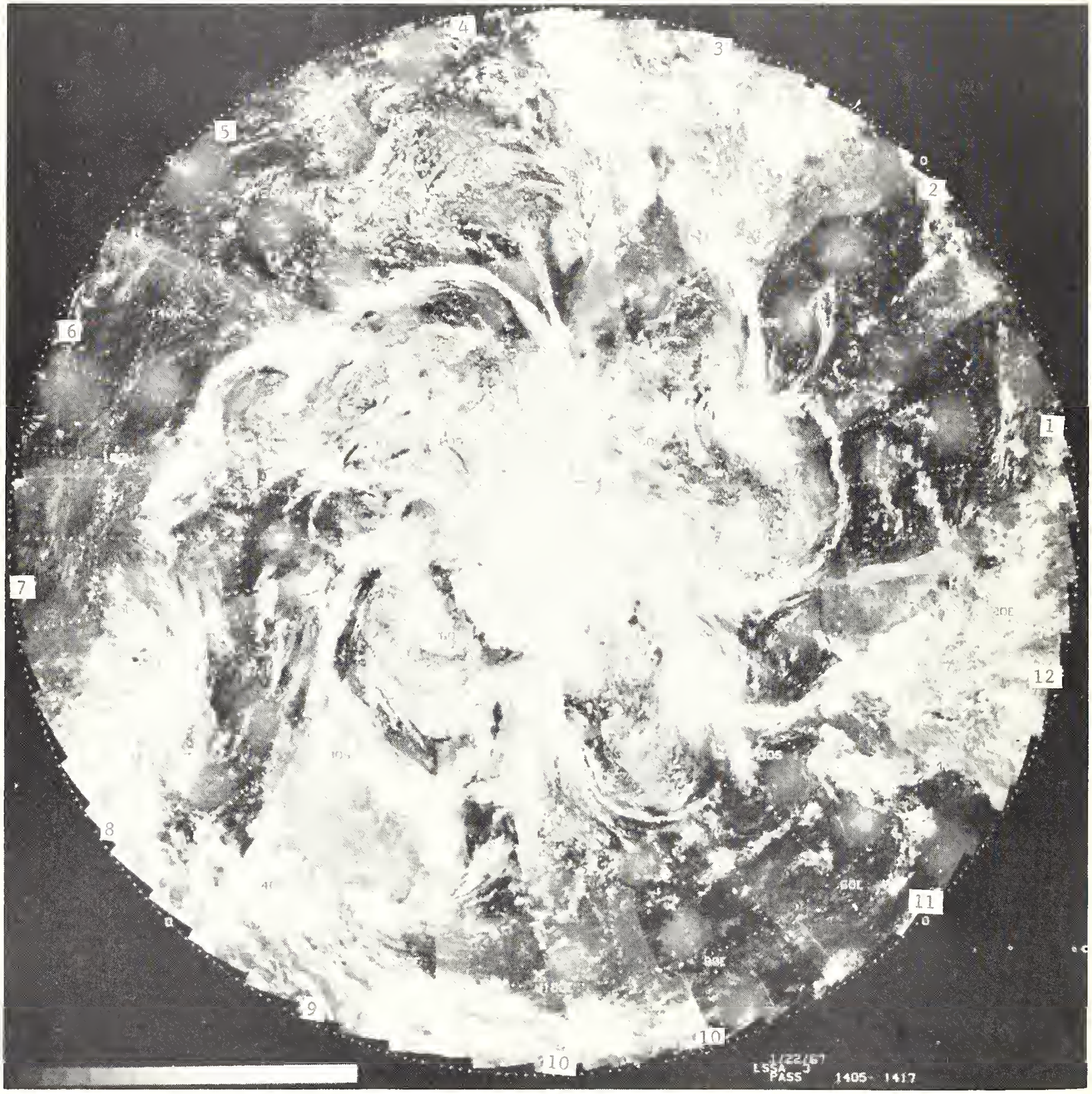
1/22/67
ESSA 3
PASS 1405- 1417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9
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140W
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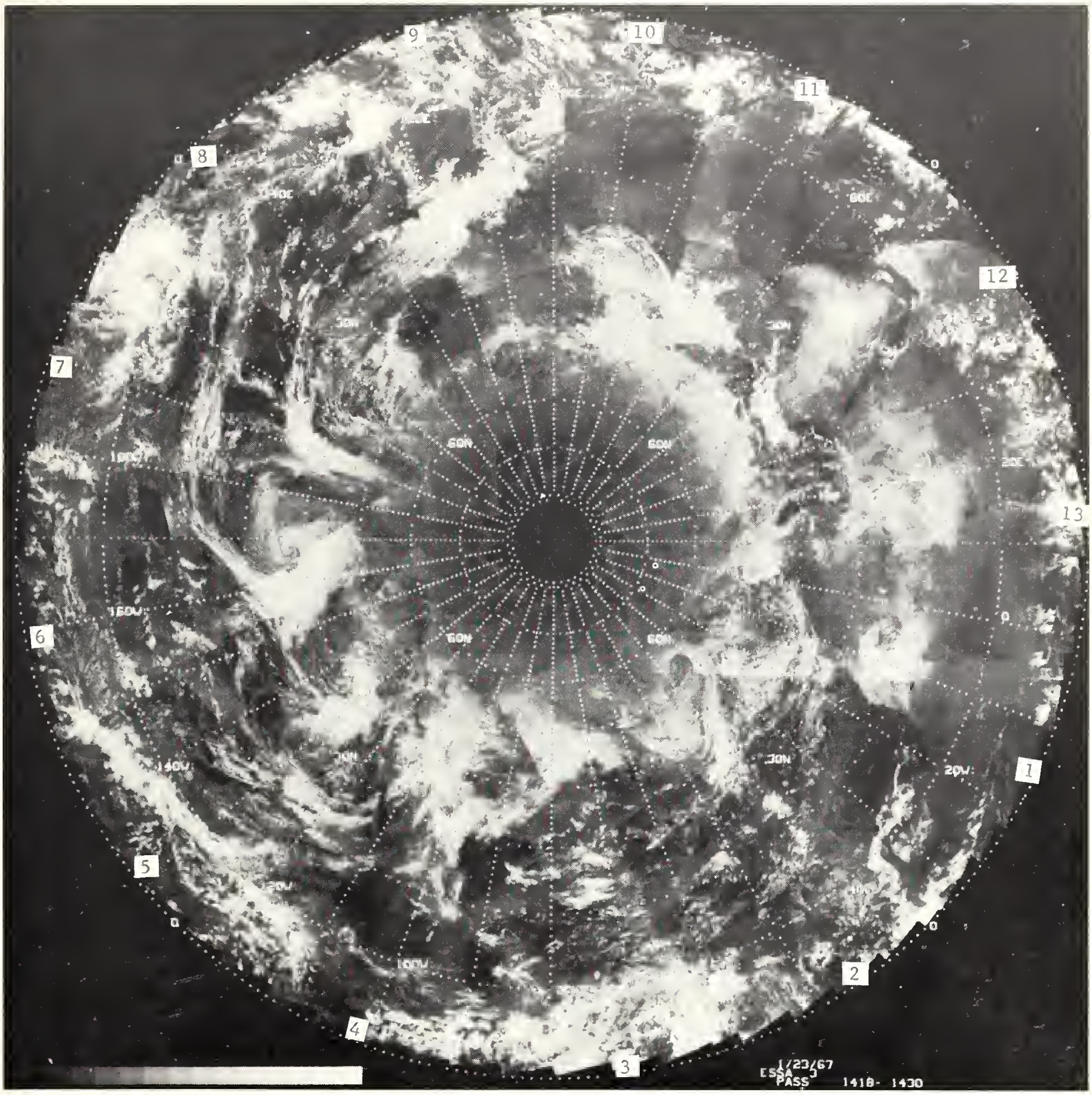
20E
60E
1/22/67
ESSA 3
PASS 1405 1417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140E
60E
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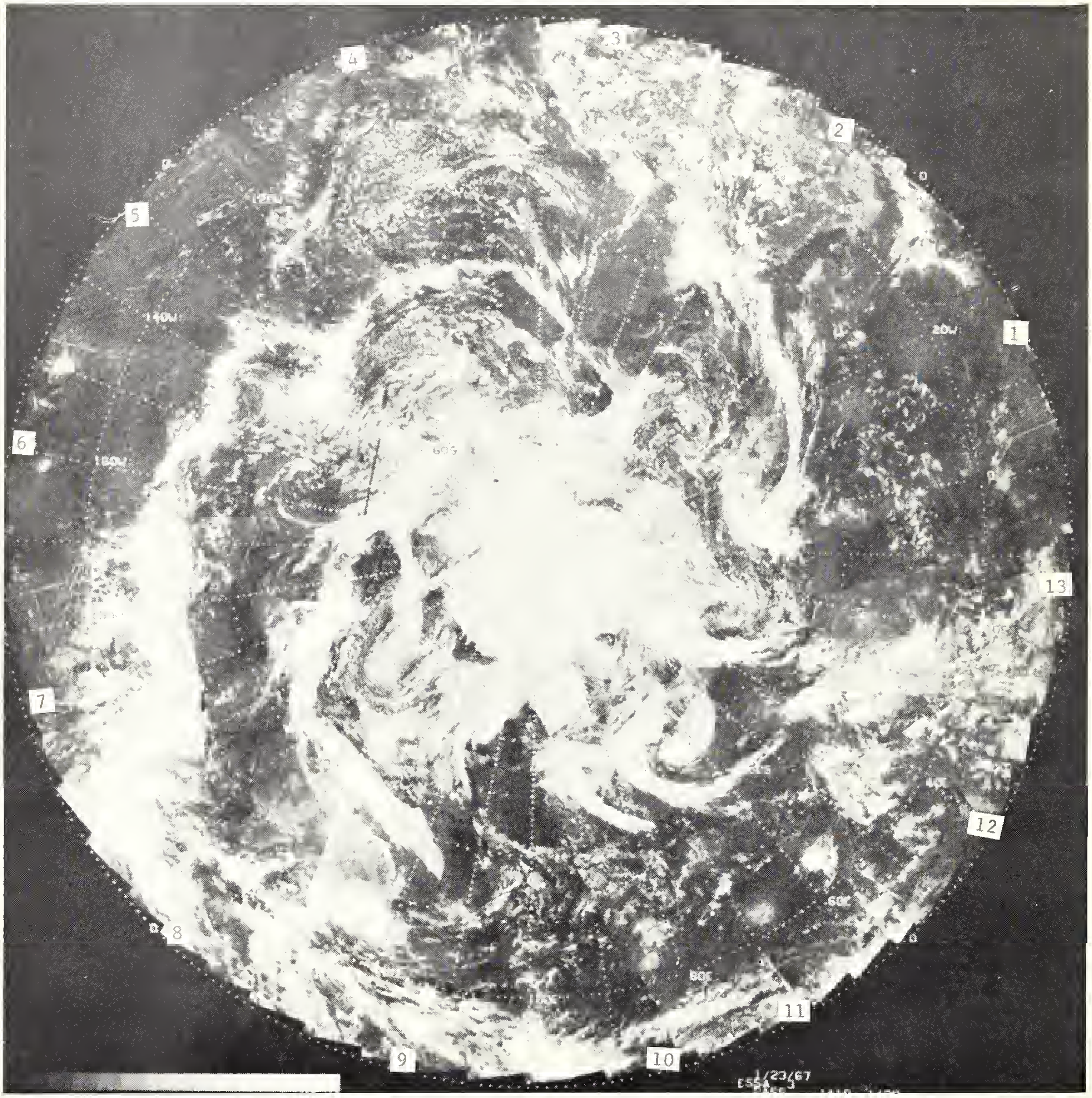
12
7
30N
30N
60N
60N
20E
13
160W
0
6
60N
60N
30N
30N
140W
20W
1
5
120W
0
100W
2
0
4
3
1/23/67
ESSA 3
PASS 1418- 1430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10
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12
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20W
140W
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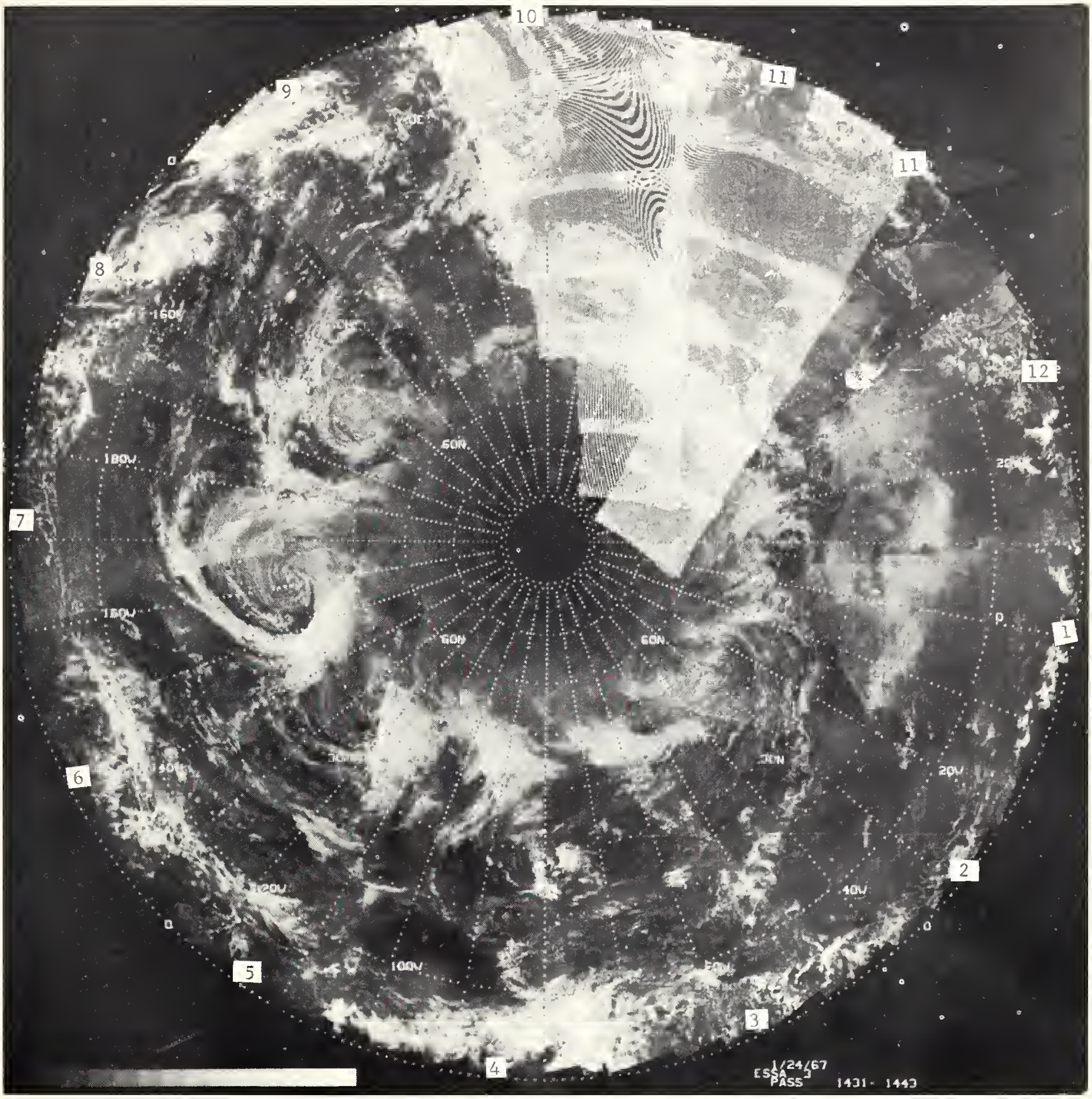
60S
80S
60E
1/23/67
ESSA 3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4
160W
180W
160W
60N
60N
60N
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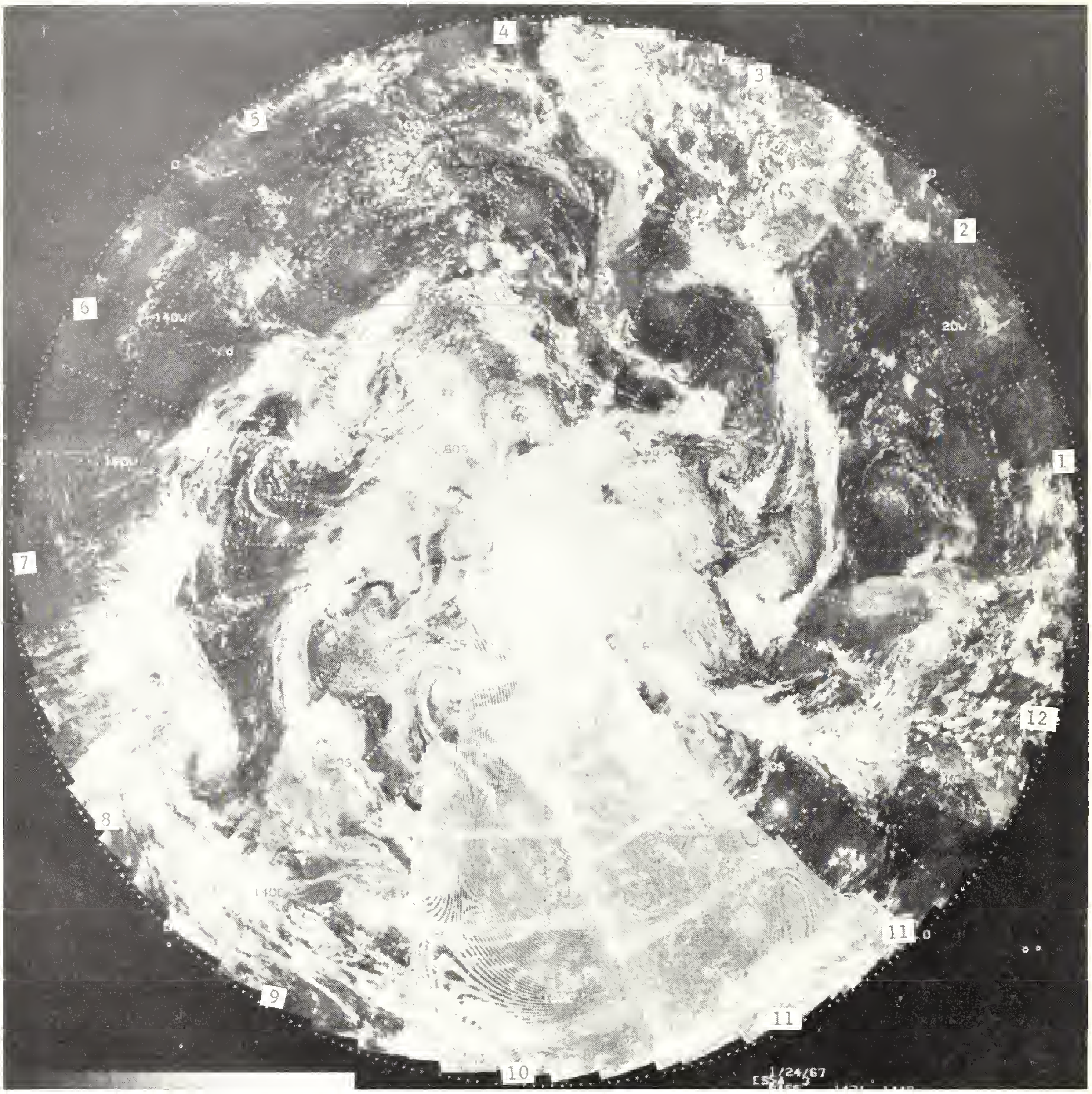
30N
20V
40V
120V
100V
60V
20
0
1/24/67
ESSA 3
PASS 1431 - 1443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140W
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12
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9
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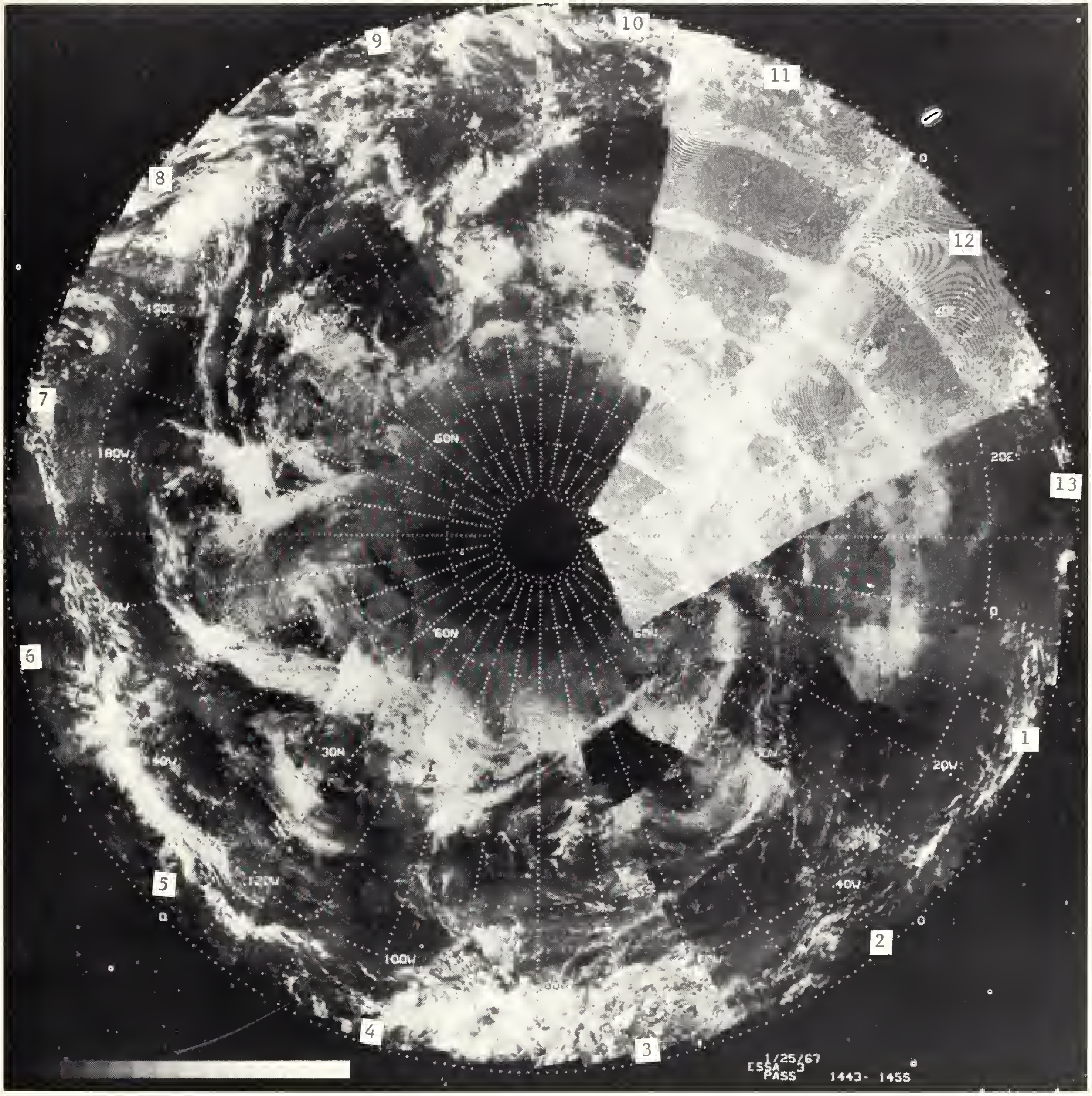
10
1/24/67
ESSA 3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3
160E
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60N
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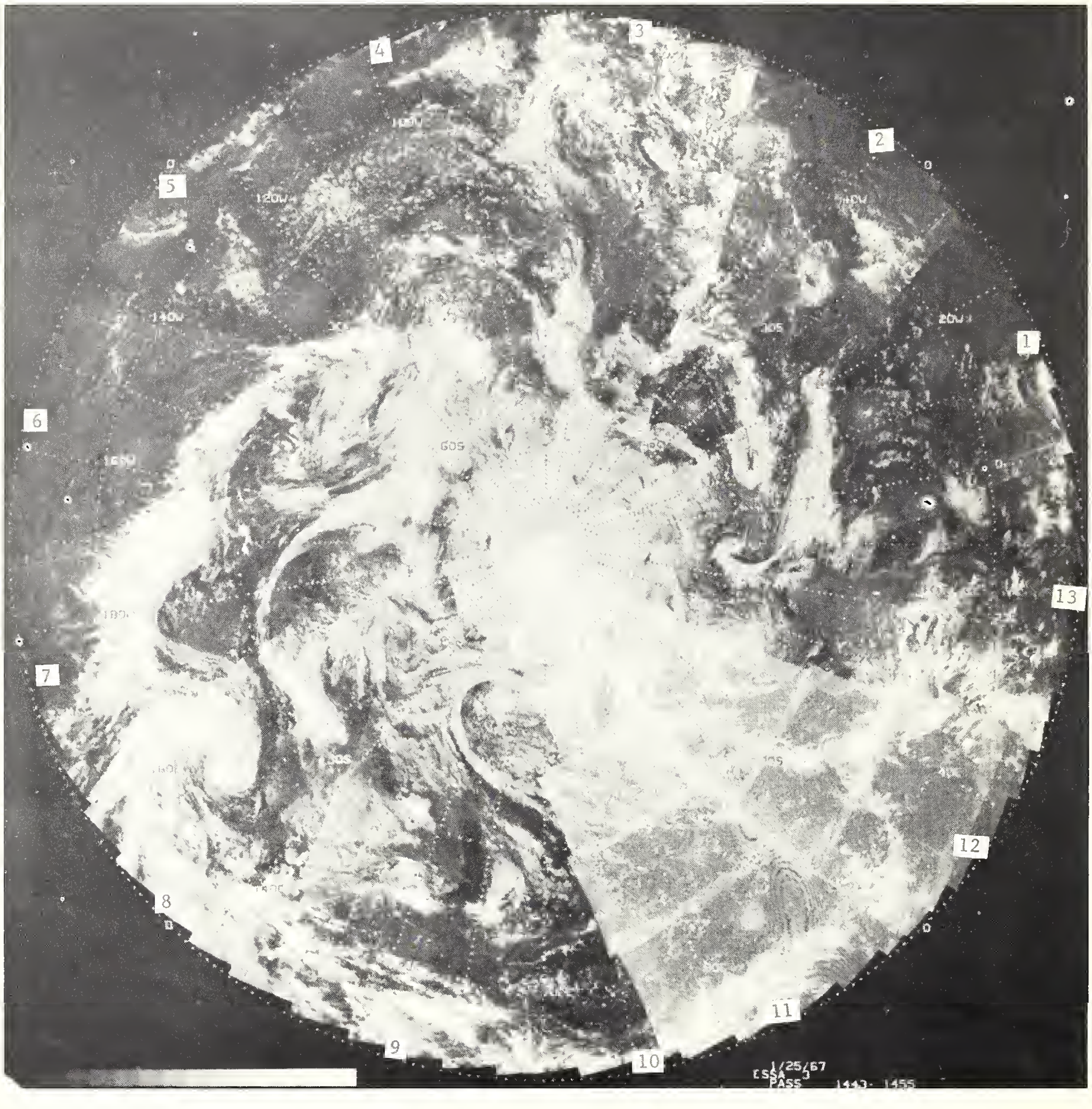
60N
140W
30N
20W
120W
40W
100W
1/25/67
ESSA 3
PASS 1443- 1455



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40W
140W
20W
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60S
160W
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180
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30S
12
8
140E
0
11
9
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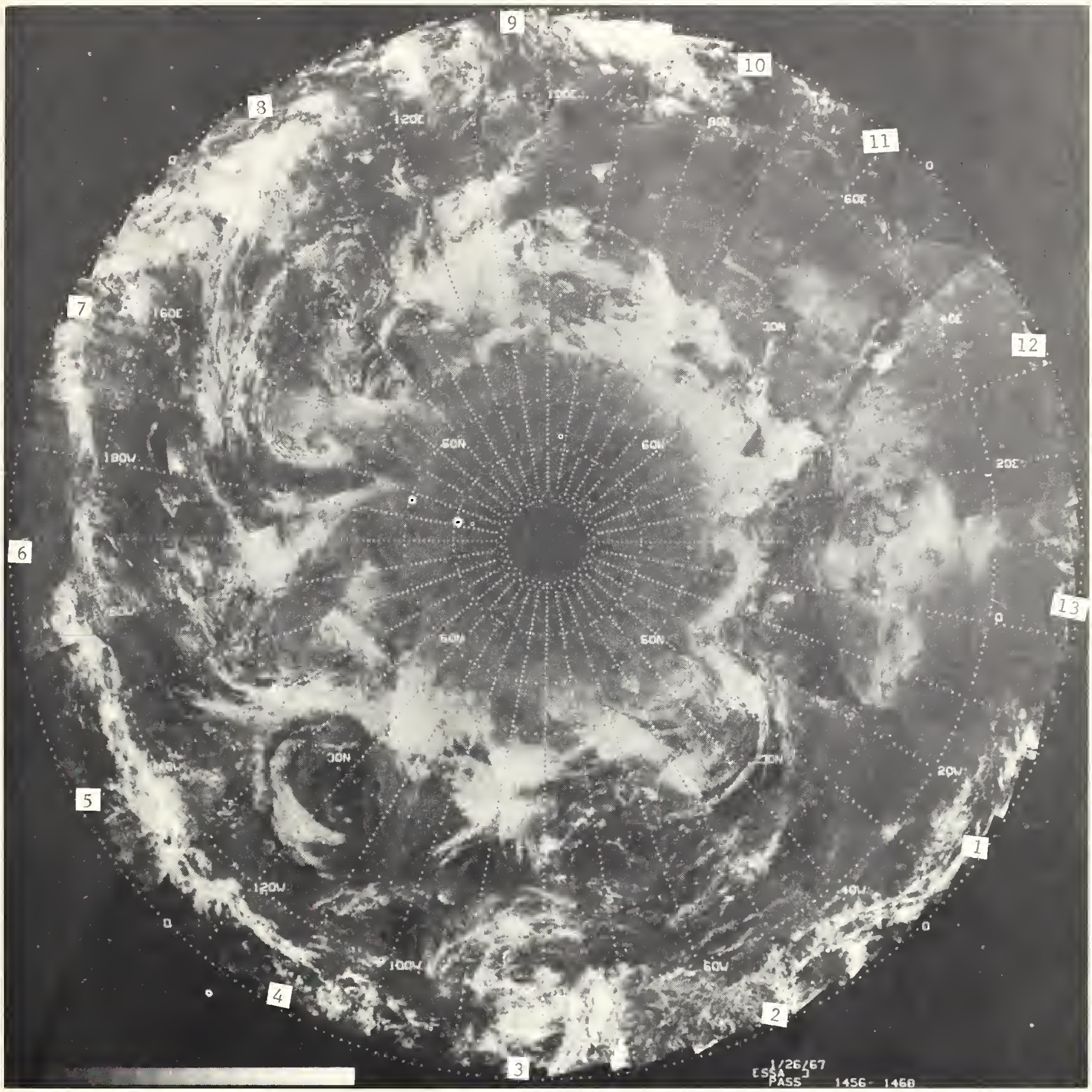
1/25/67
ESSA 3
PASS 1443- 1455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60E
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160E
40E
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60N
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30N
30N
20W
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120W
40W
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100W
60W
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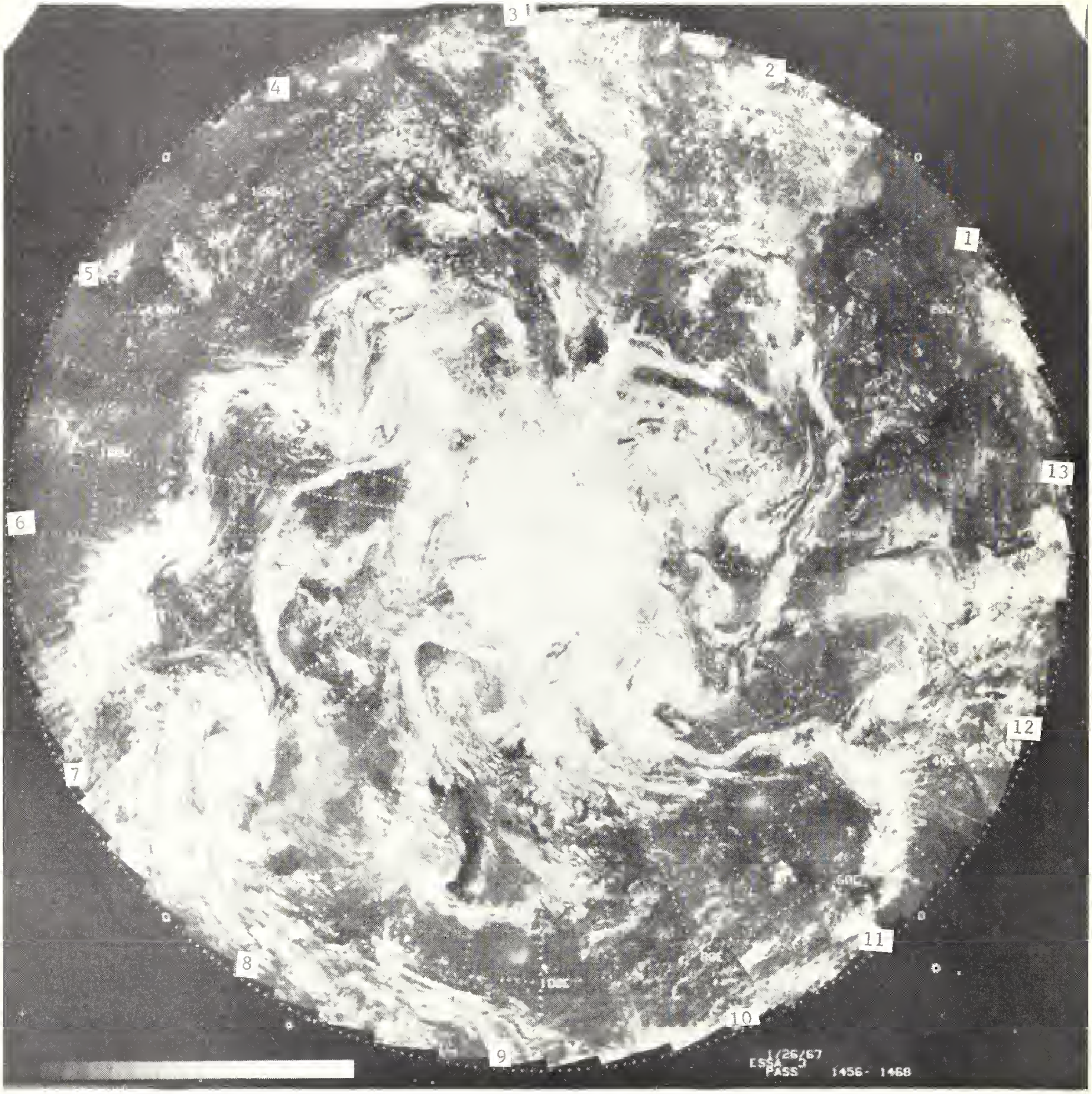
3
1/26/67
ESSA 3
PASS 1456- 1468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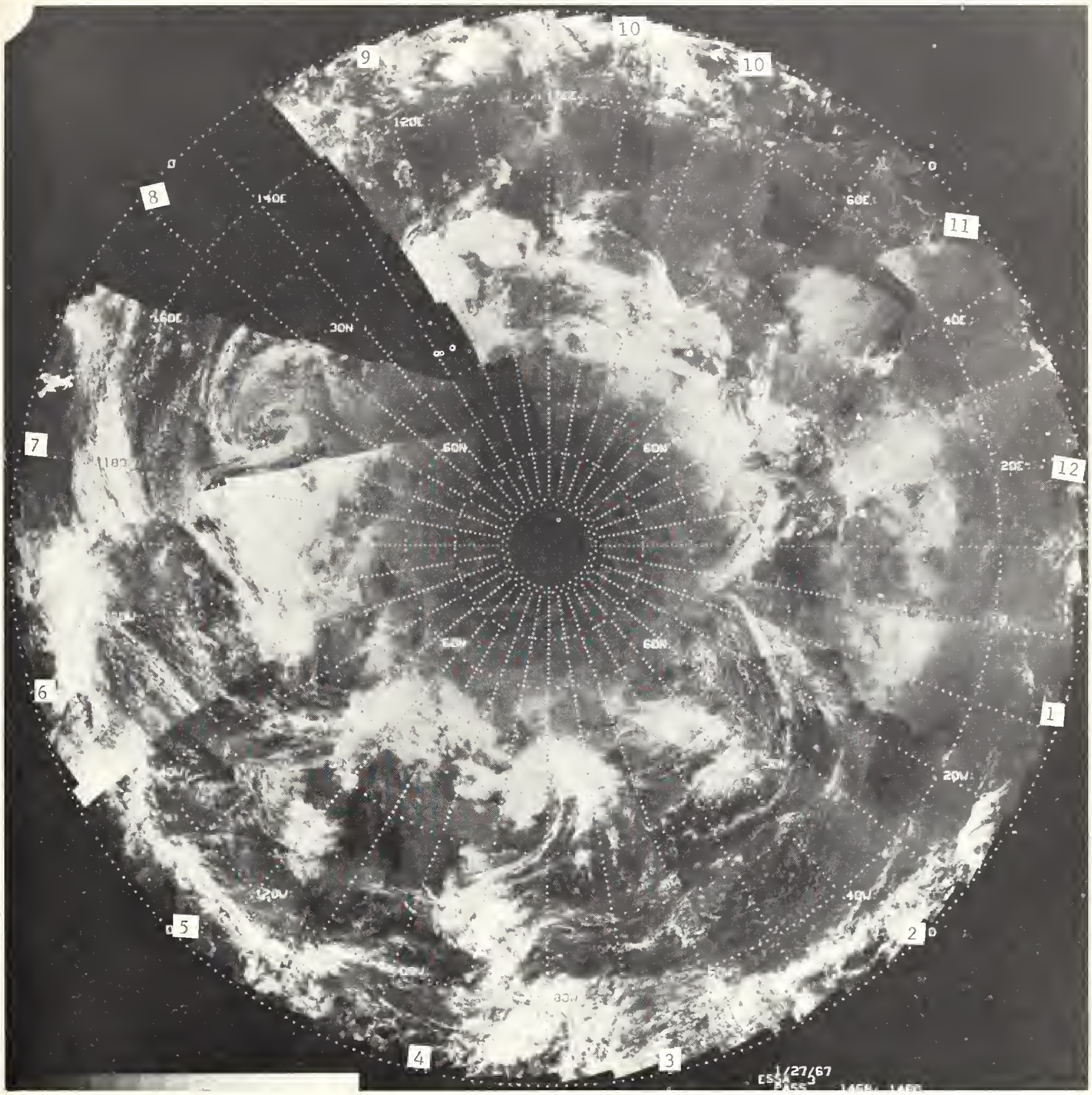
1/26/67
ESSA 3
PASS 1456- 1468



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100E
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140E
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160E
20E
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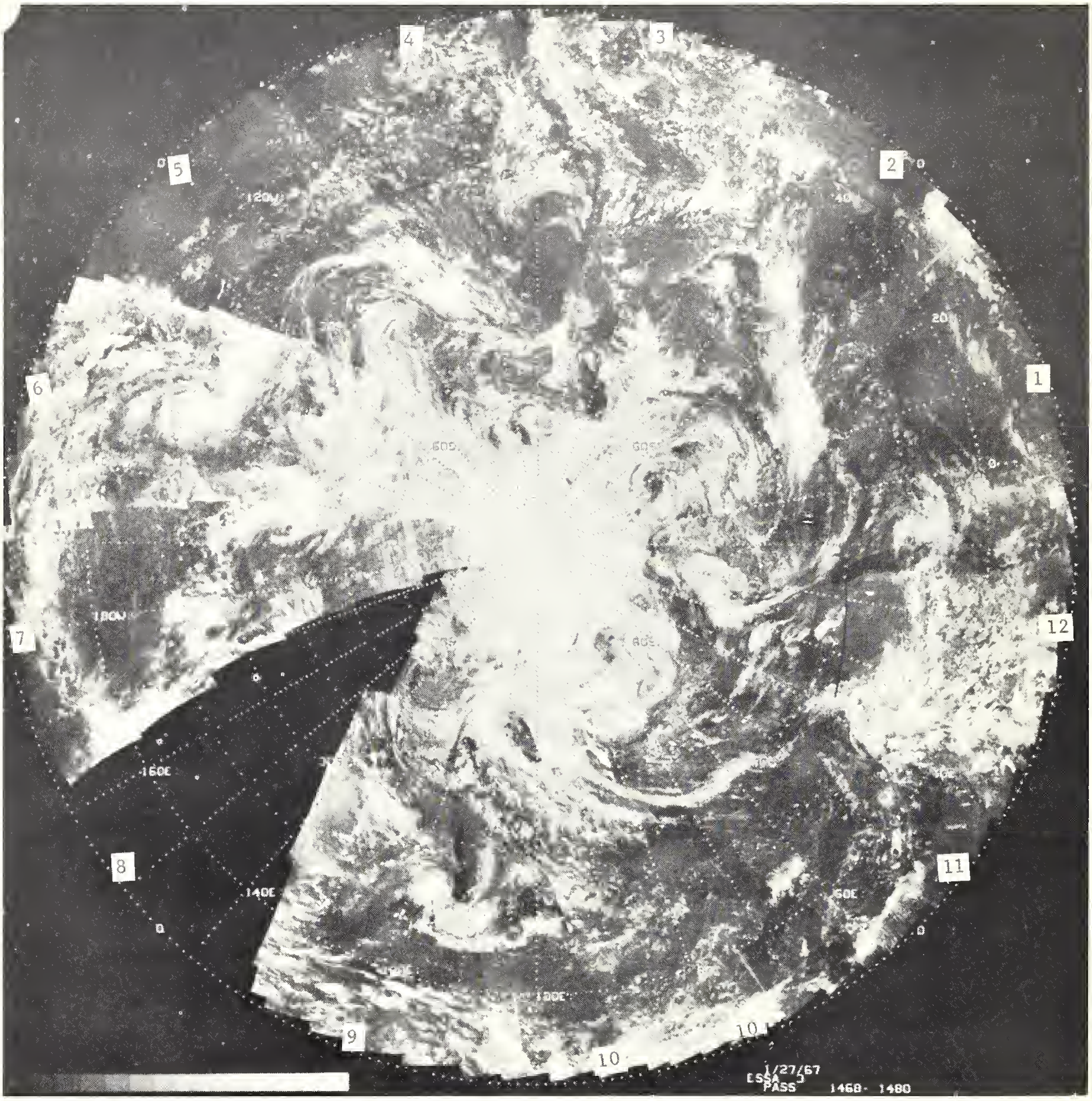
30N
60N
60N
60N
60N
20W
40W
80W
60W
120W
ESSA 3
1/27/67
PASS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120W
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60S
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180W
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60S
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140E
60E
100E
9
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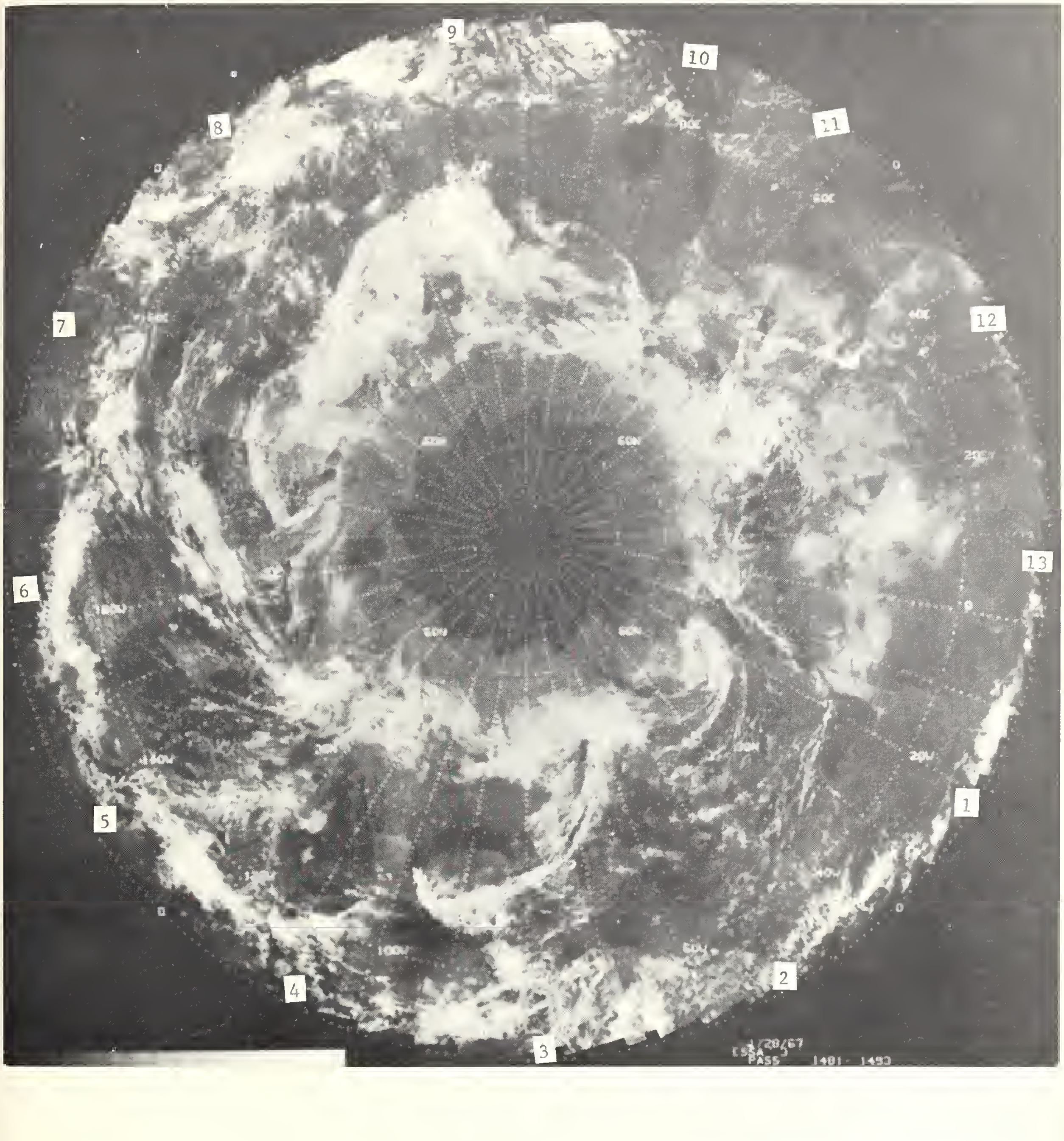
10
1/27/67
ESSA 3
PASS 1468- 1480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60E
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20E
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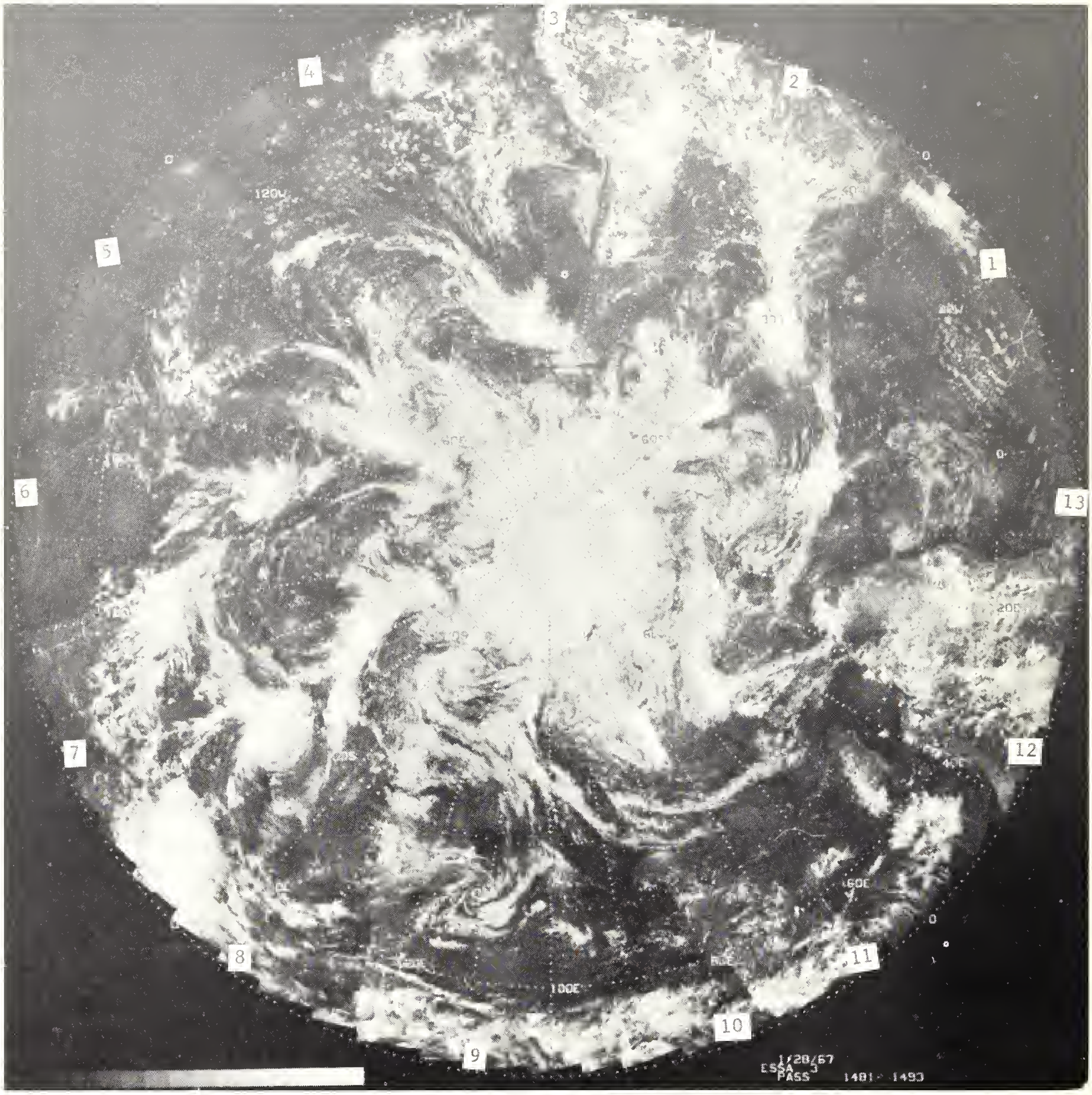
20W
40W
60W
100W
140W
180W
160E
1/20/67
ESSA 3
PASS 1481- 1493



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80W
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80E
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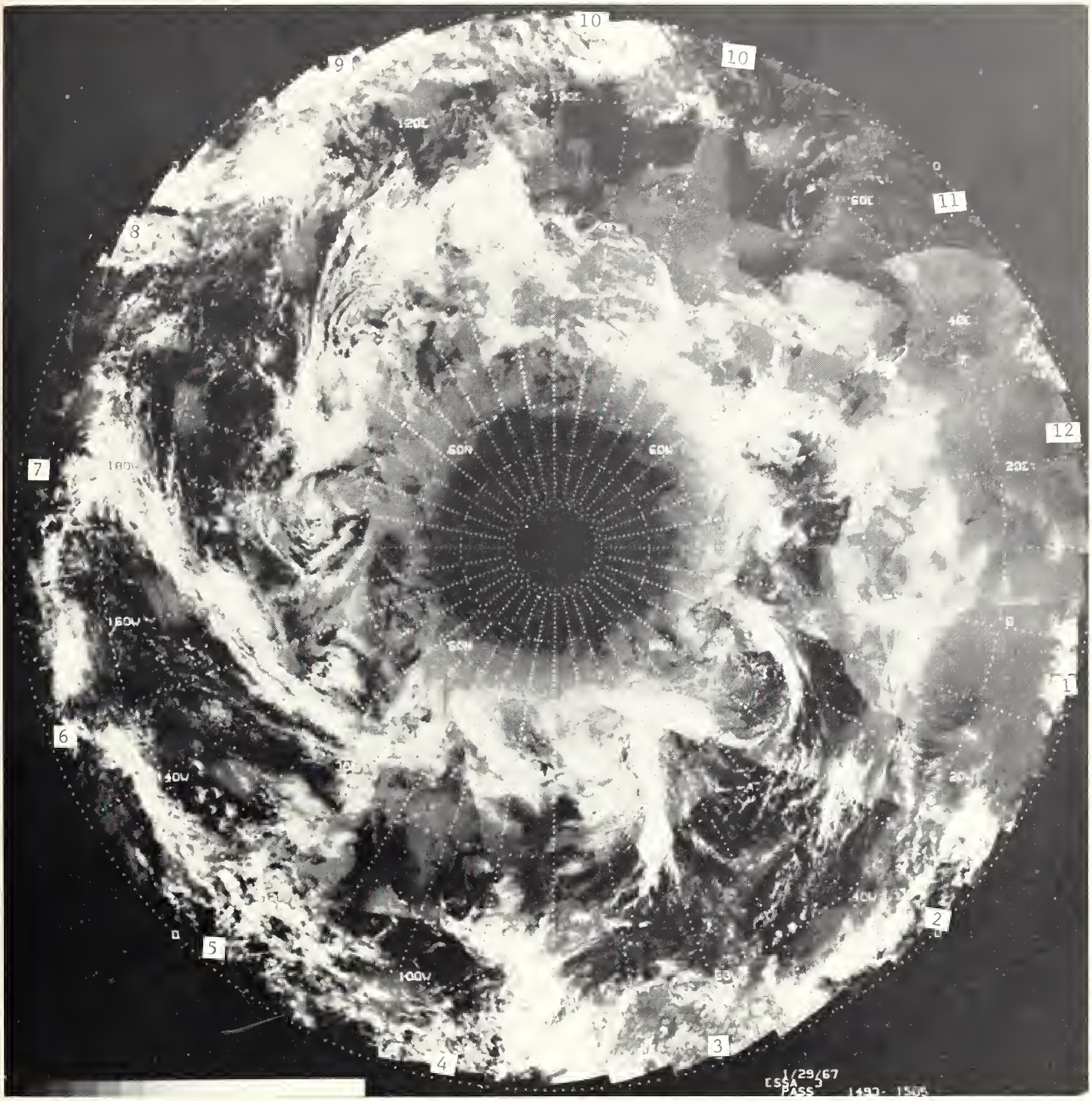
1/28/67
ESSA 3
PASS 1481 - 1493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180W
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60N
60N
1
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2
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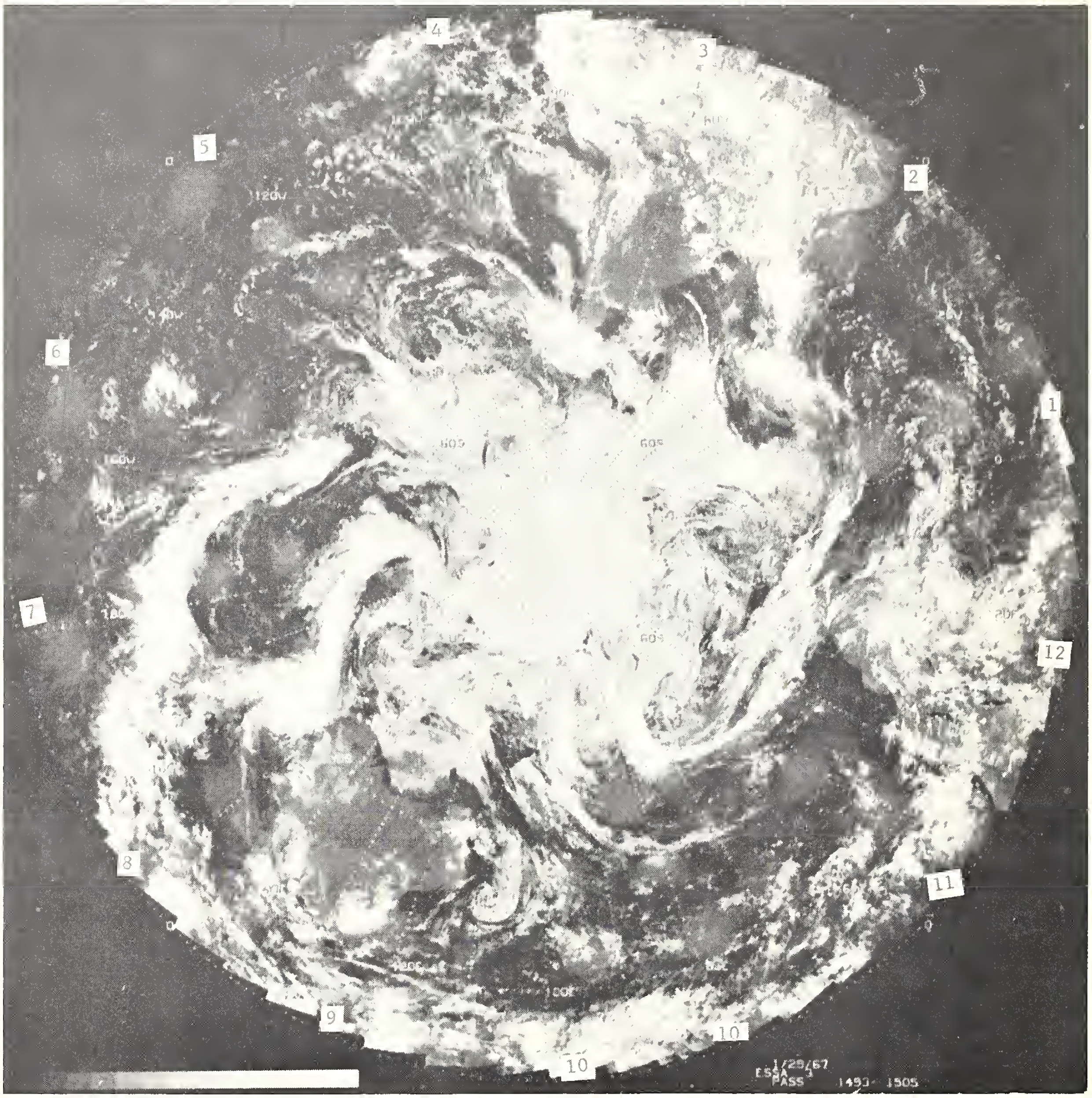
3
4
1/29/67
ESSA 3
PASS 1493- 1505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60S
60S
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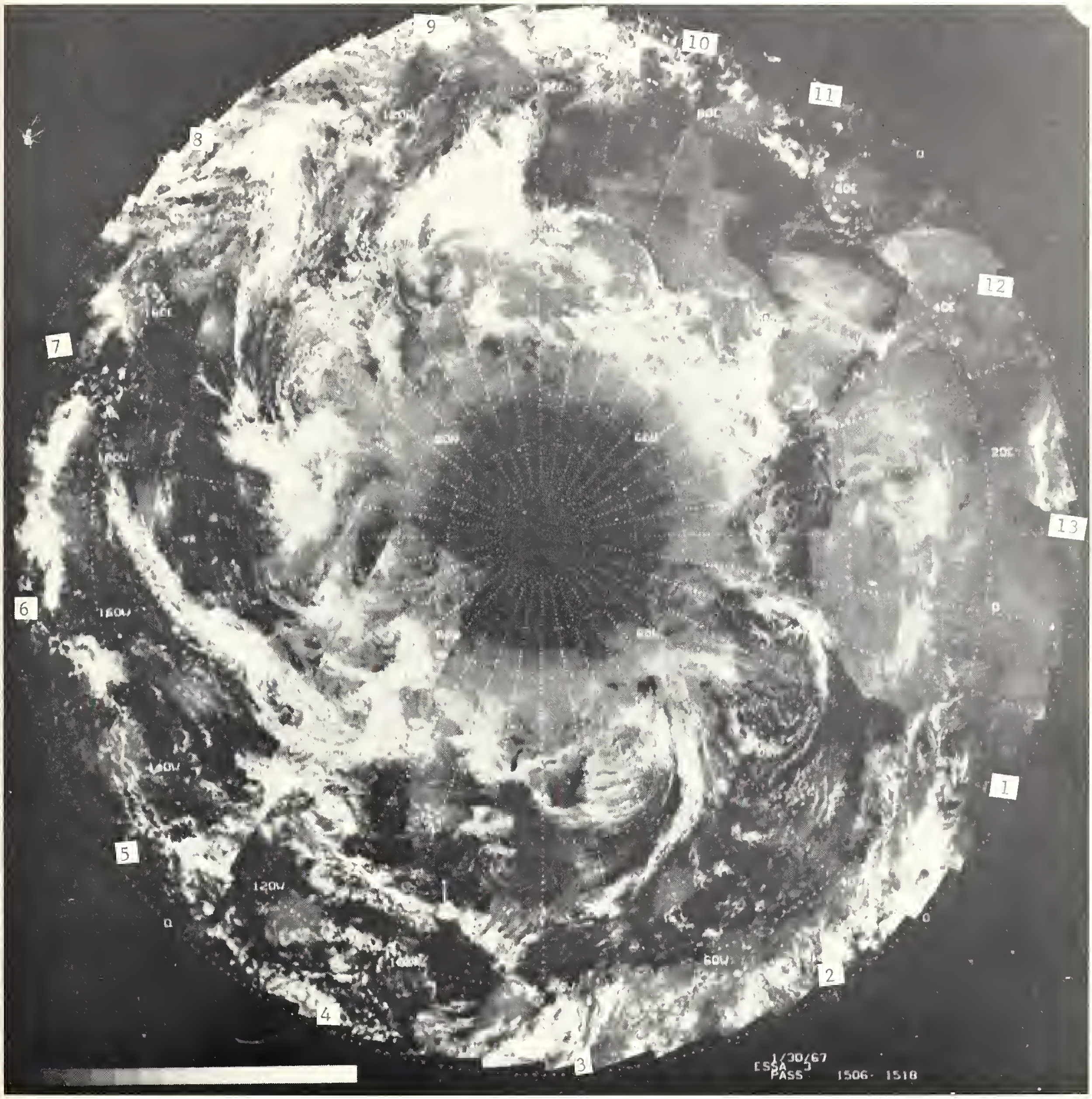
1/29/67
ESSA 3
PASS 1493 - 1505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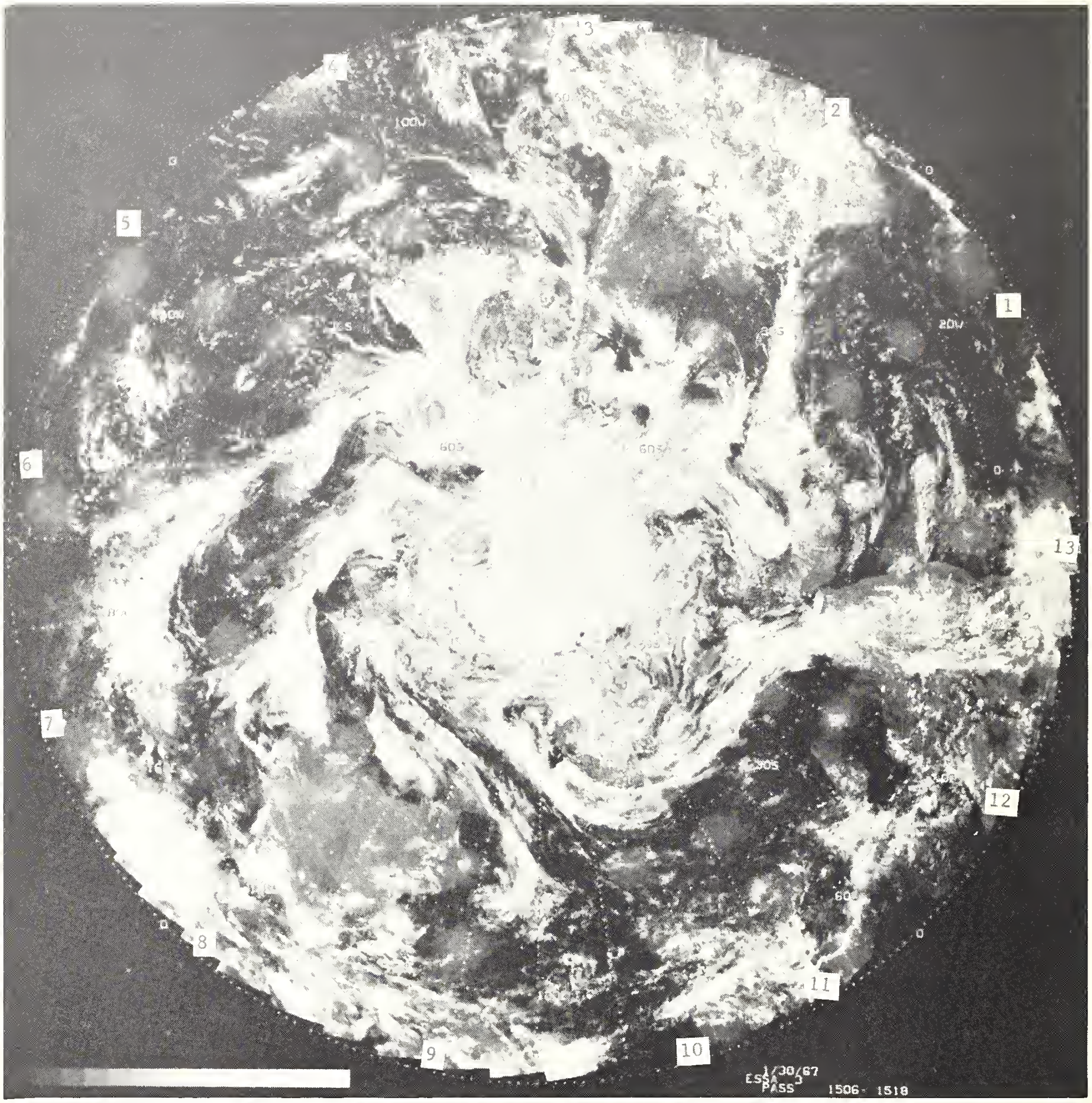
160E
160W
140W
120W
100W
60W
40E
20E
1/30/67
ESSA 3
PASS 1506- 1518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20W
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30S
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60
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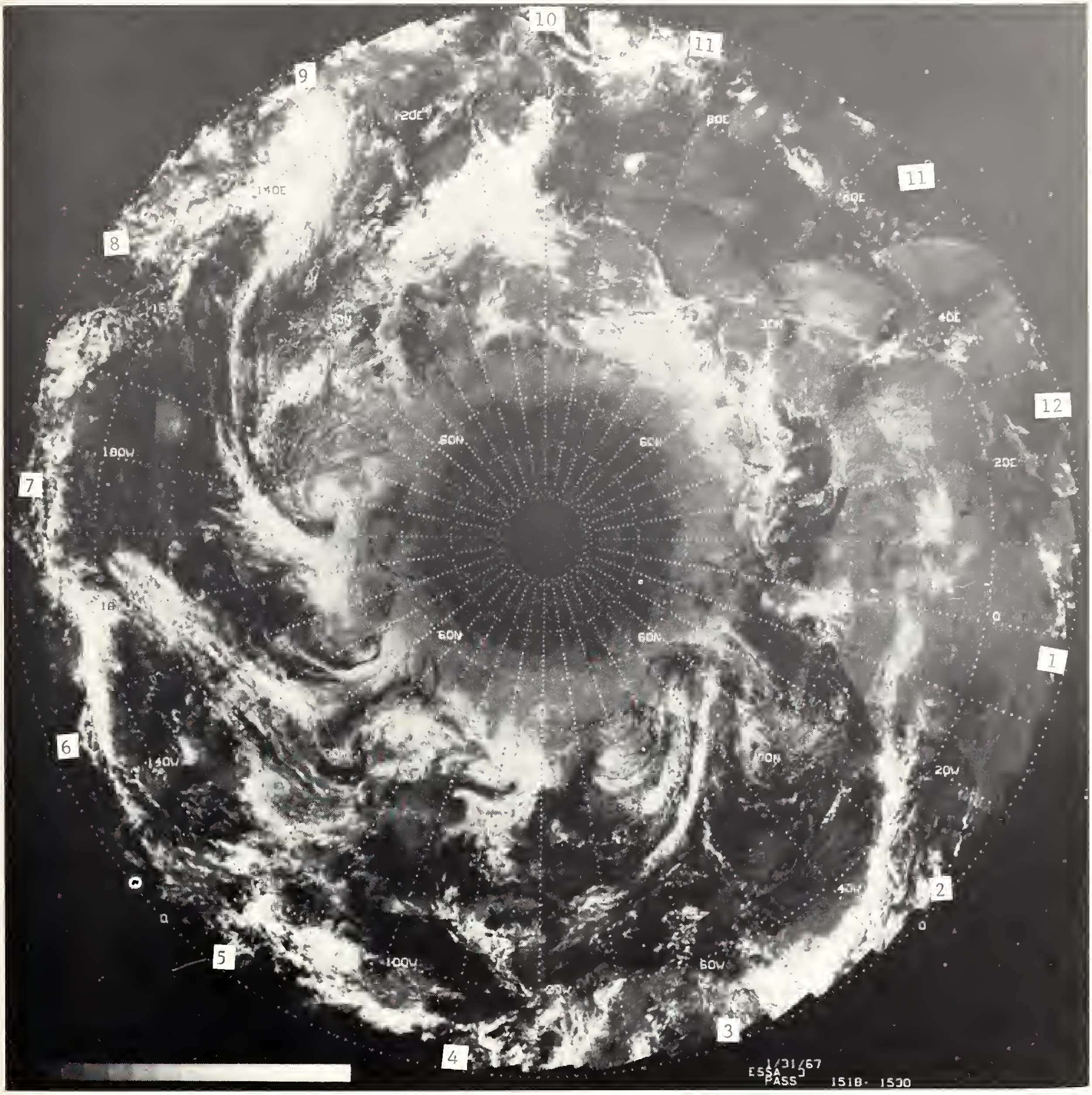
10
1/30/67
ESSA 3
PASS
1506- 1518

10
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160E
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180W
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60N
60N
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140W
20N
20W
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100W
80W
60W
40W
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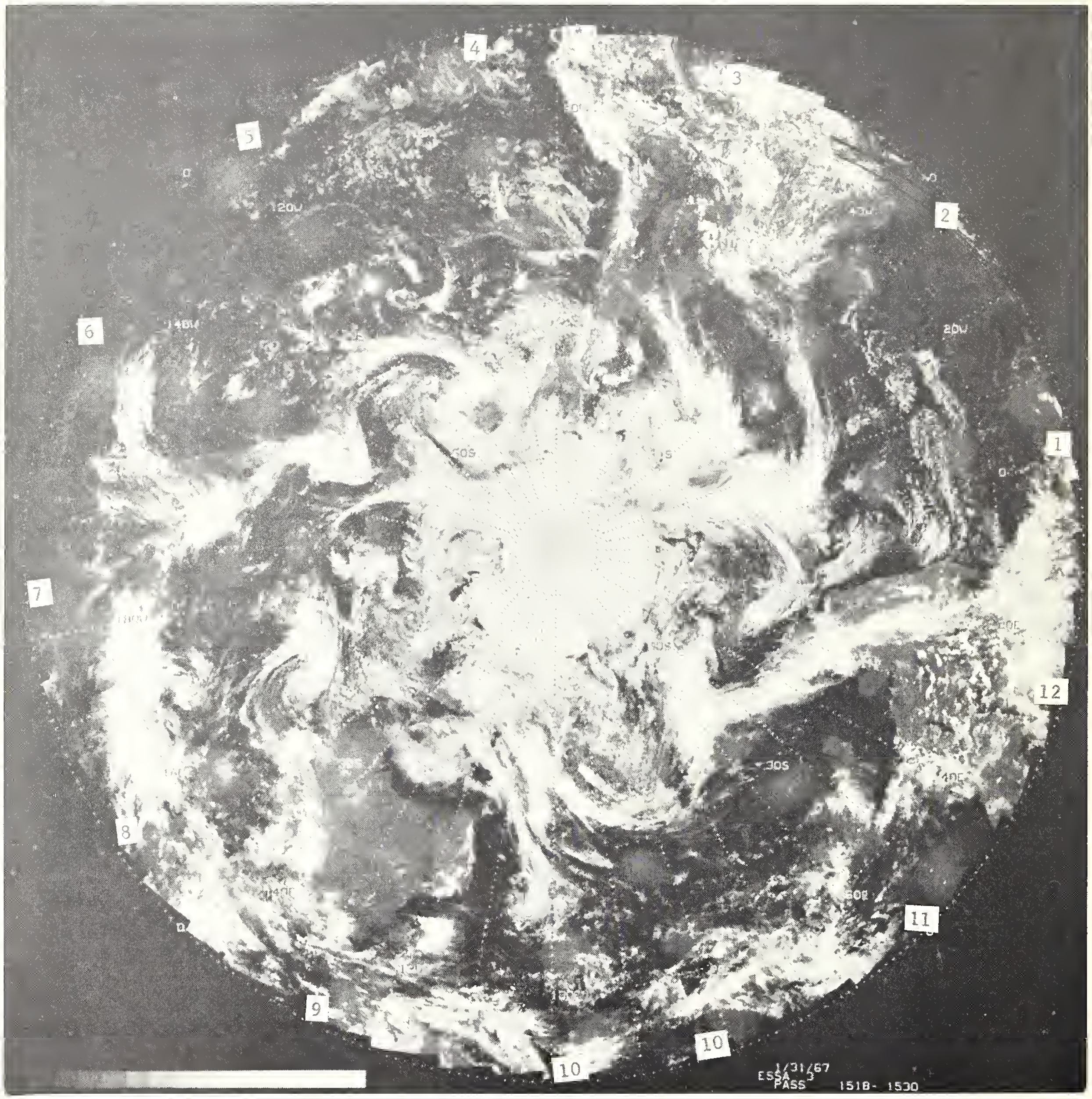
4
1/31/67
ESSA 3
PASS 1518-1530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140W
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60S
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140E
60E
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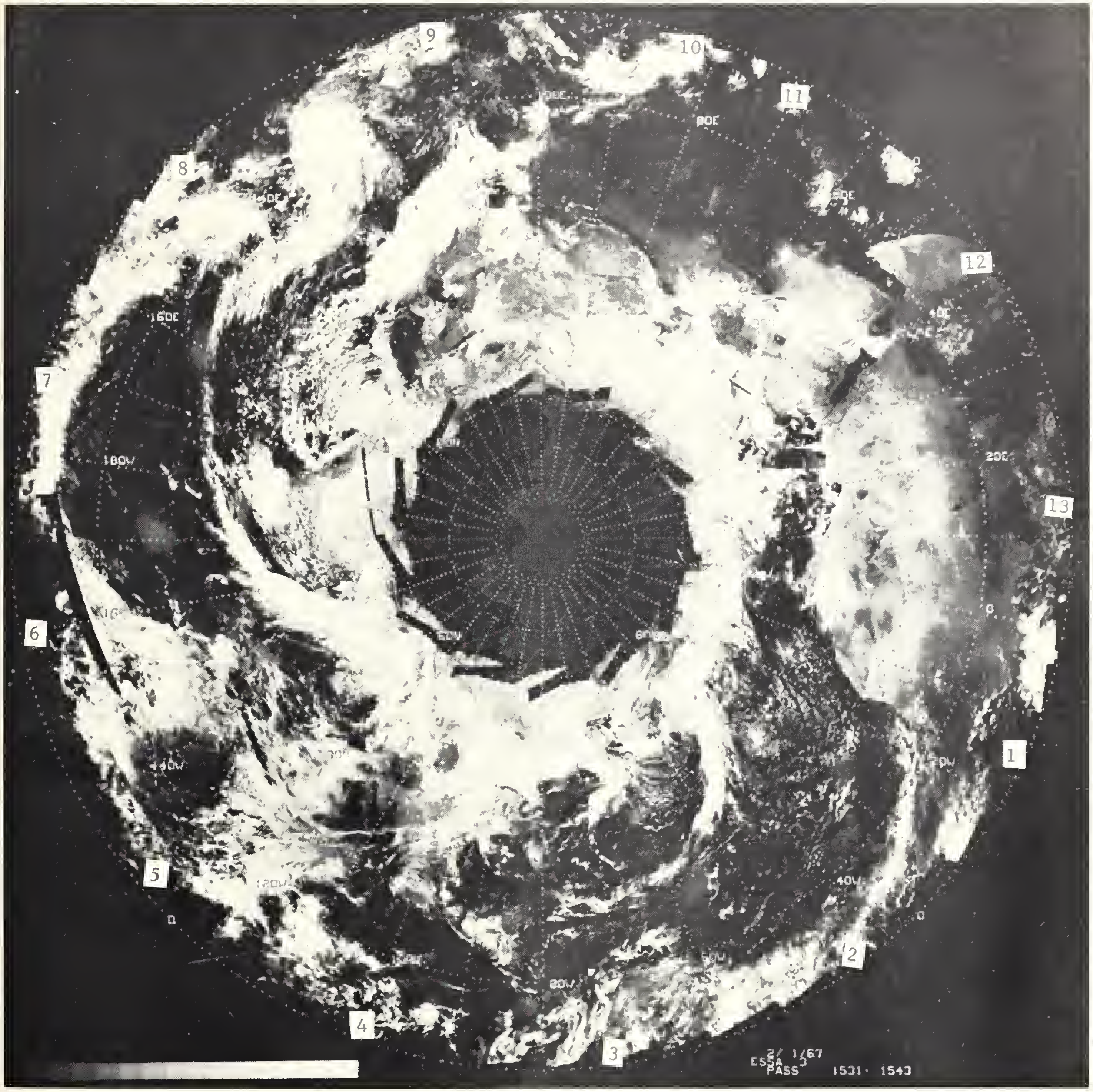
1/31/67
ESSA 3
PASS 1518- 1530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180W
160W
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120W
100W
80W
60W
40W
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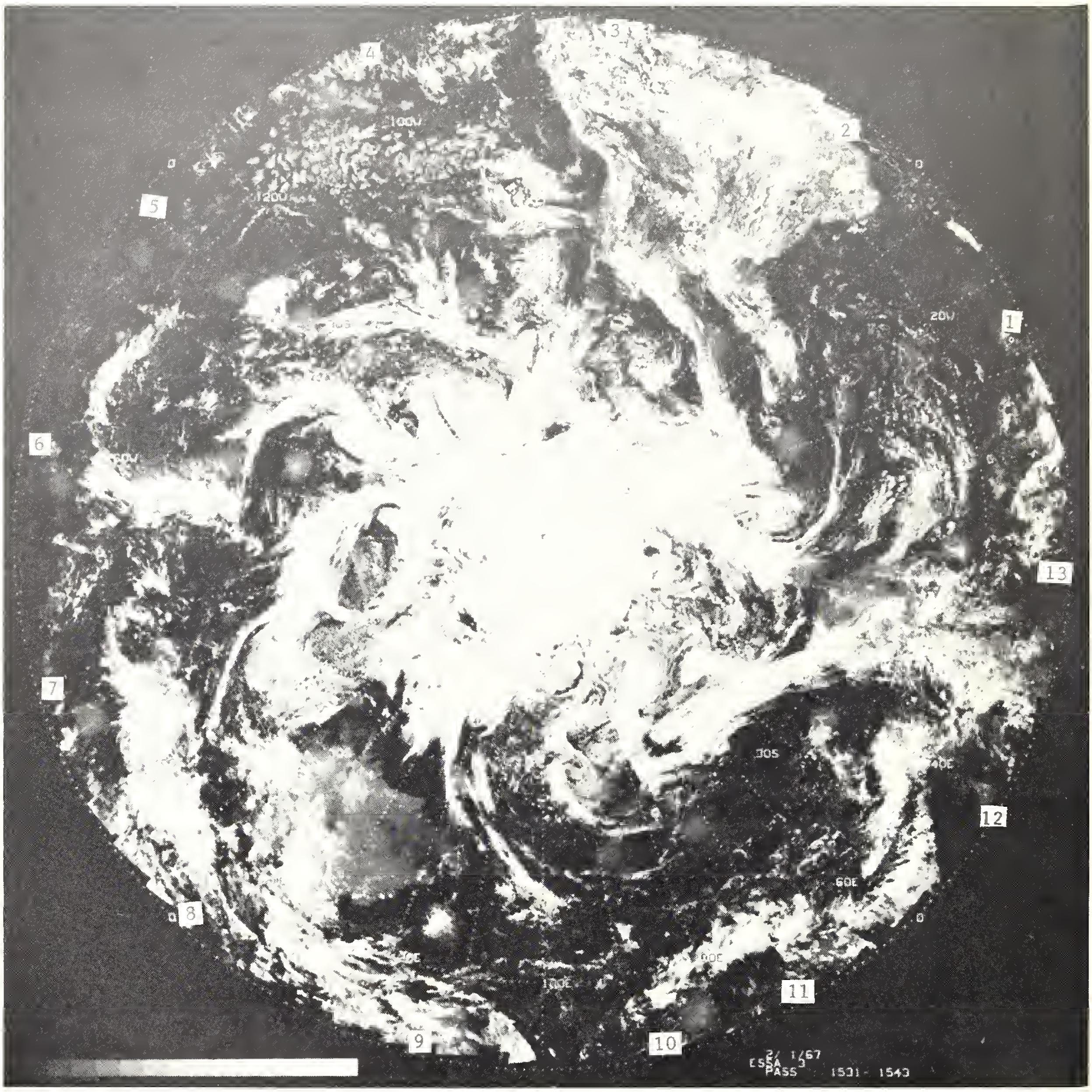
20E
40E
80E
60E
60N
60W
2/ 1/67
ESSA 3
PASS 1531 · 1543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100W
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120W
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20W
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60W
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30S
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60E
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100E
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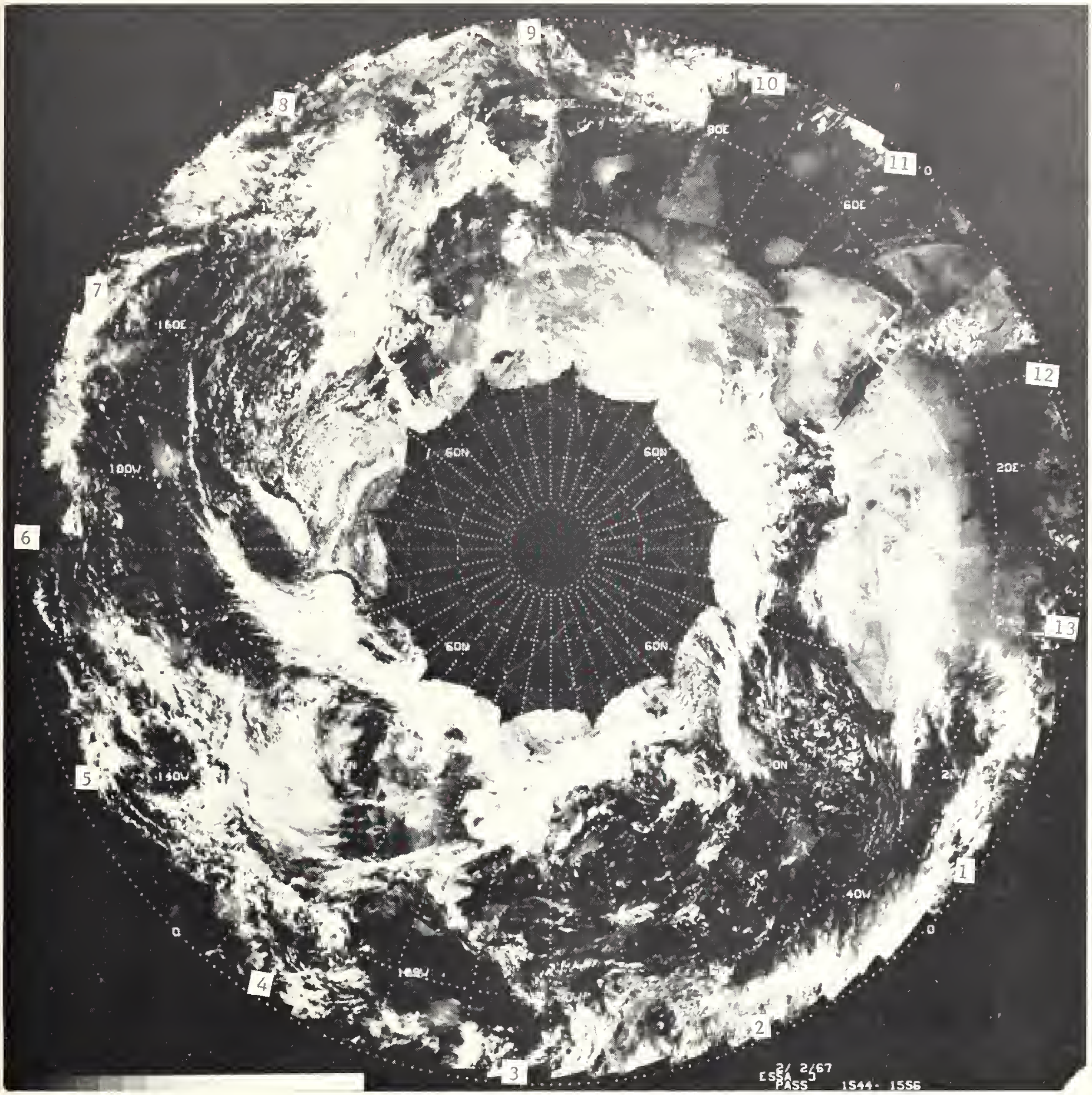
2/ 1/67
ESSA 3
PASS 1531 - 1543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80E
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160E
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60N
60N
180W
20E
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60N
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140W
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40W
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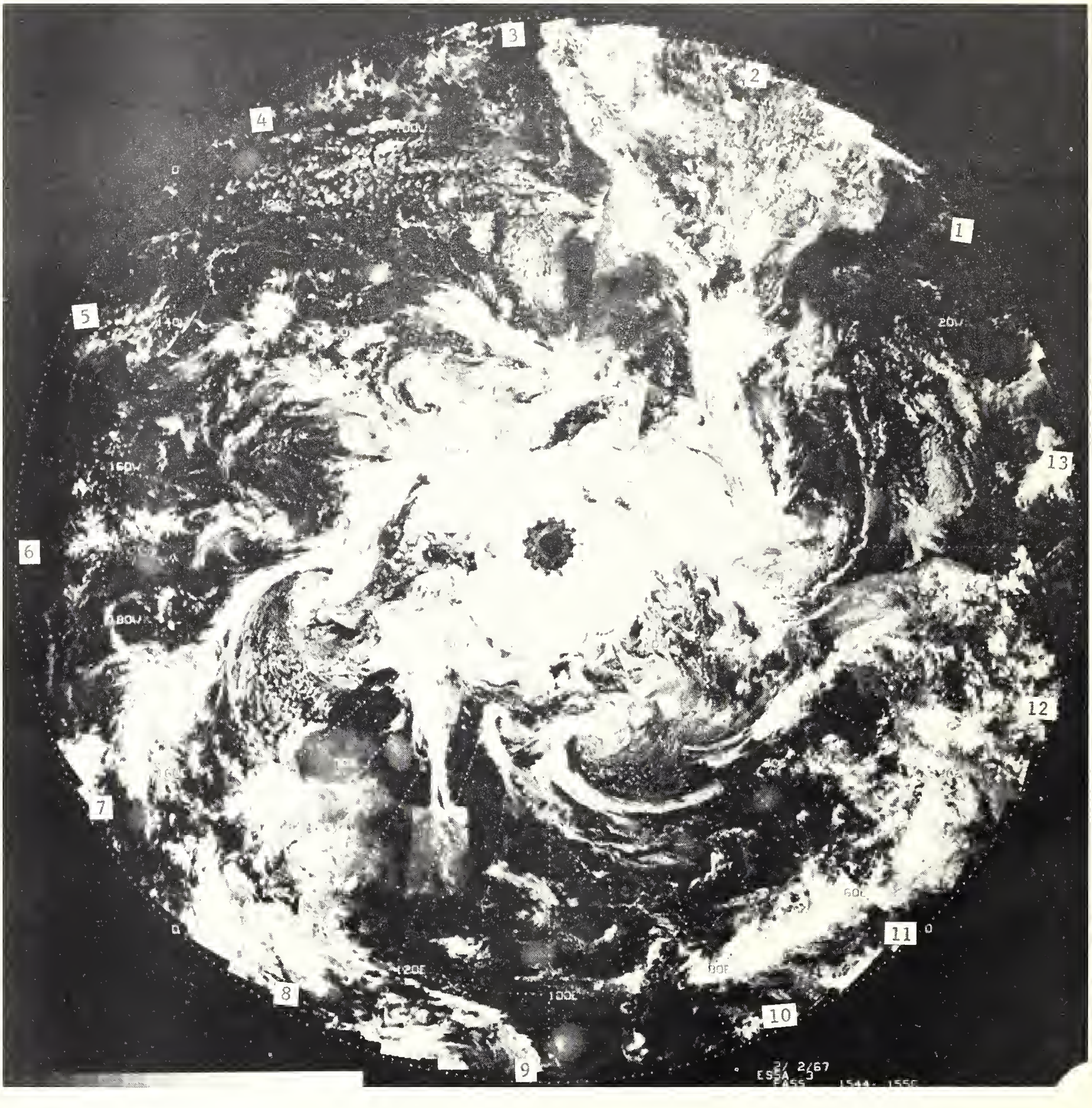
2/ 2/67
ESSA 3
PASS 1544- 1556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160W
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180W
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60E
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120E
80E
100E
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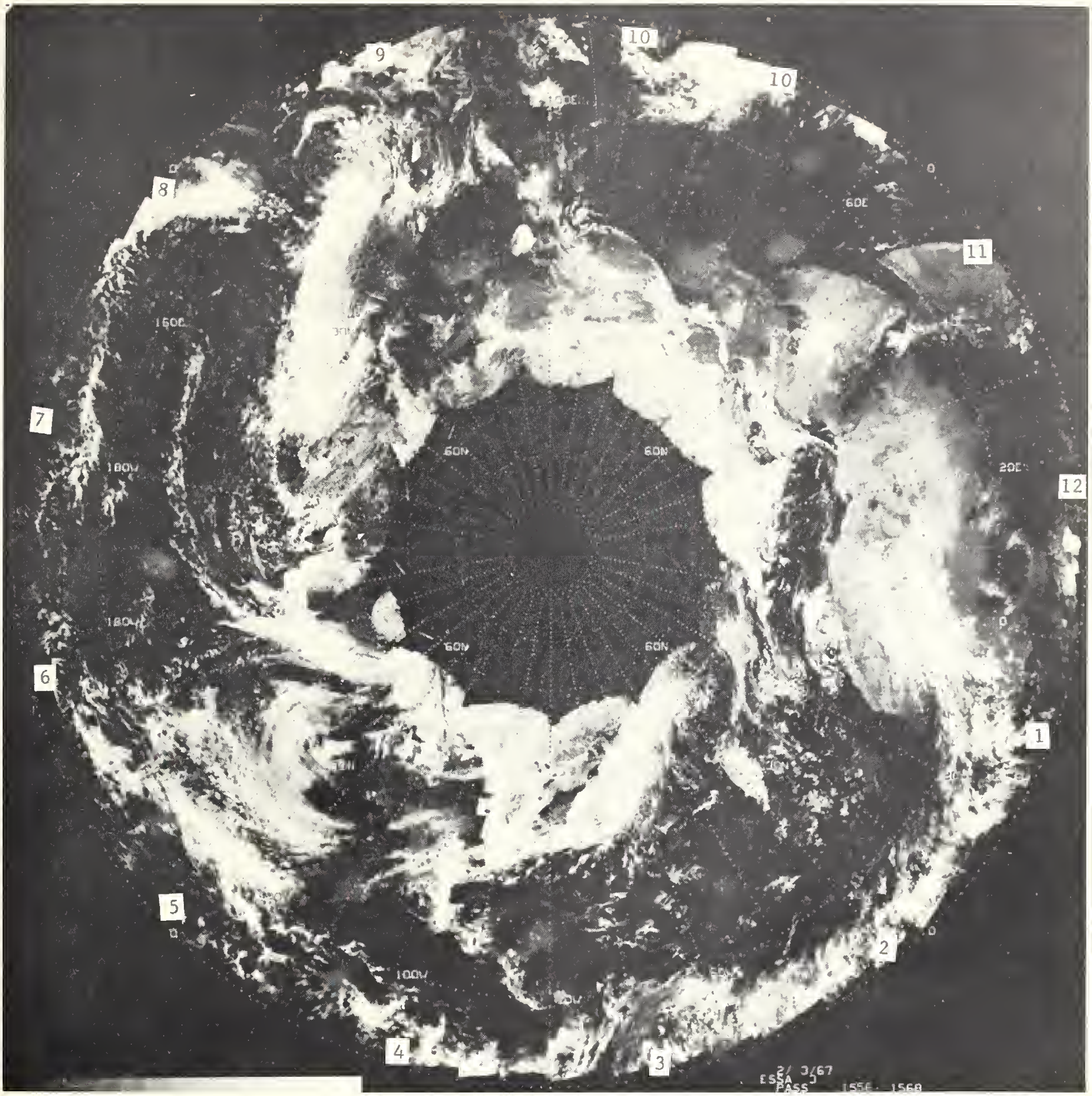
2/ 2/67
ESSA 3
PASS 1544- 1556

9
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100W
60E
20E
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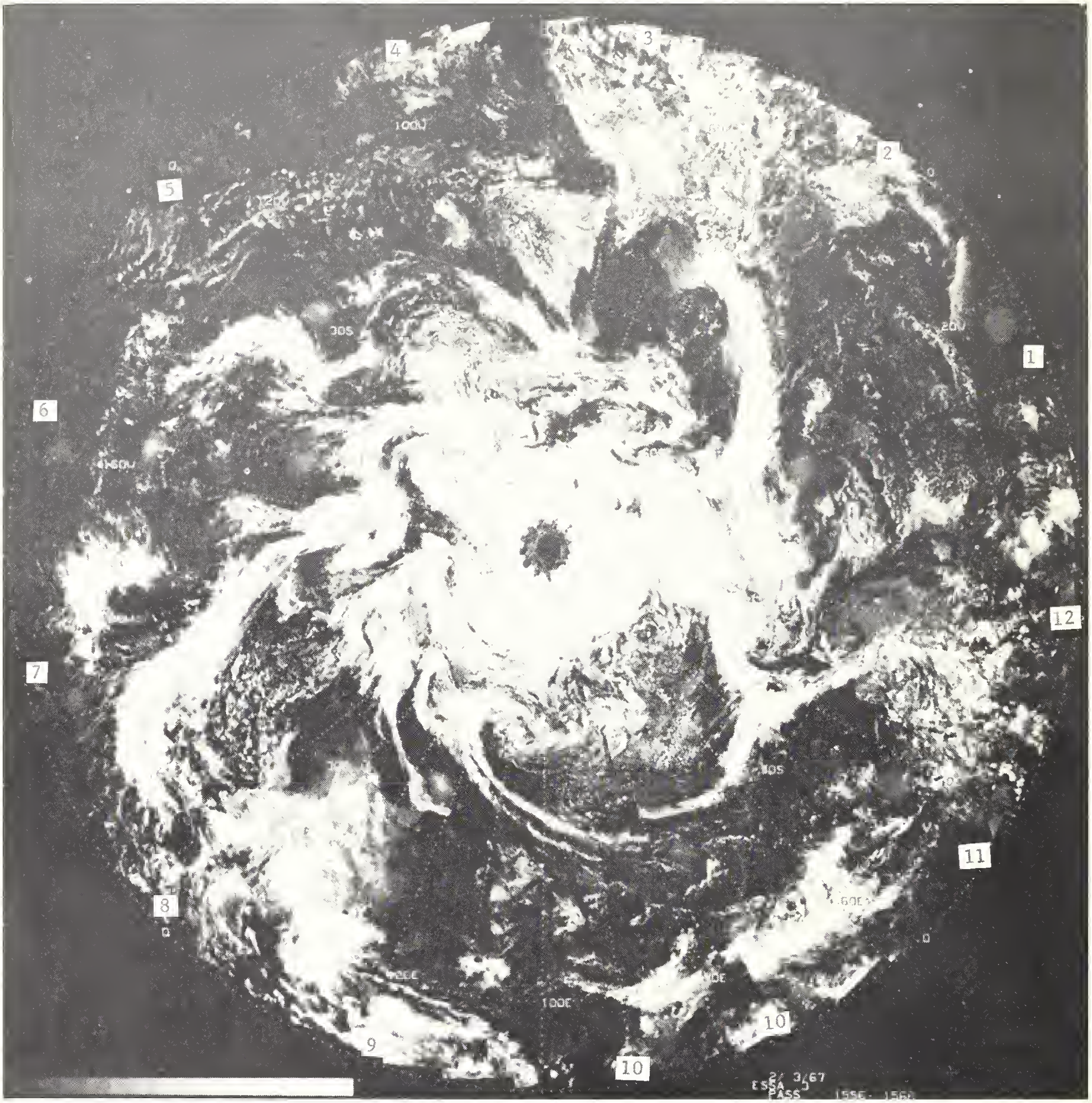
2/ 3/67
ESSA 3
PASS 1556 1568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160W
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30S
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60E
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120E
100E
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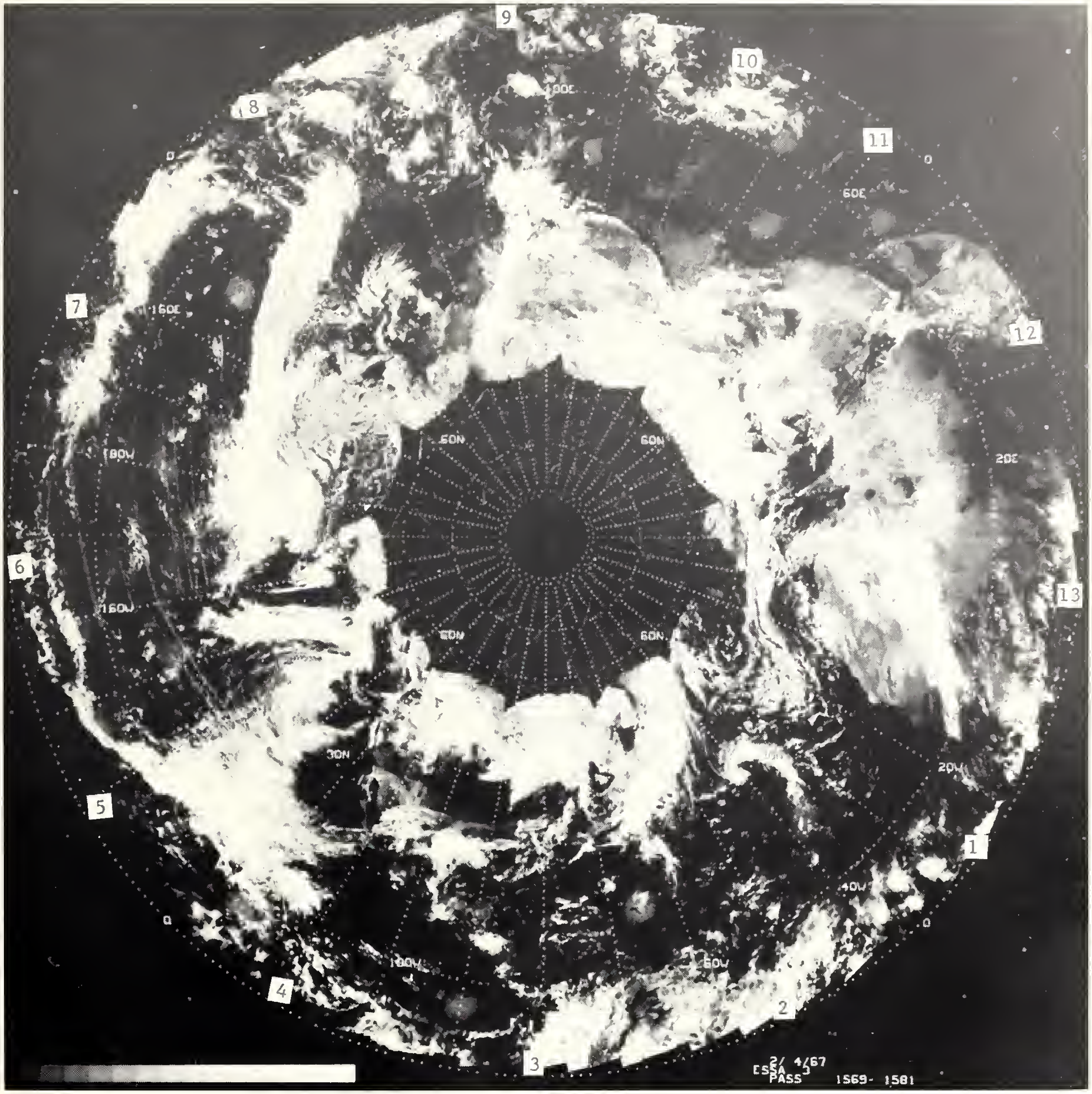
10
2/ 3/67
ESSA 3
PASS 1556 - 1568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160E
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160W
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20W
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40W
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100W
60W
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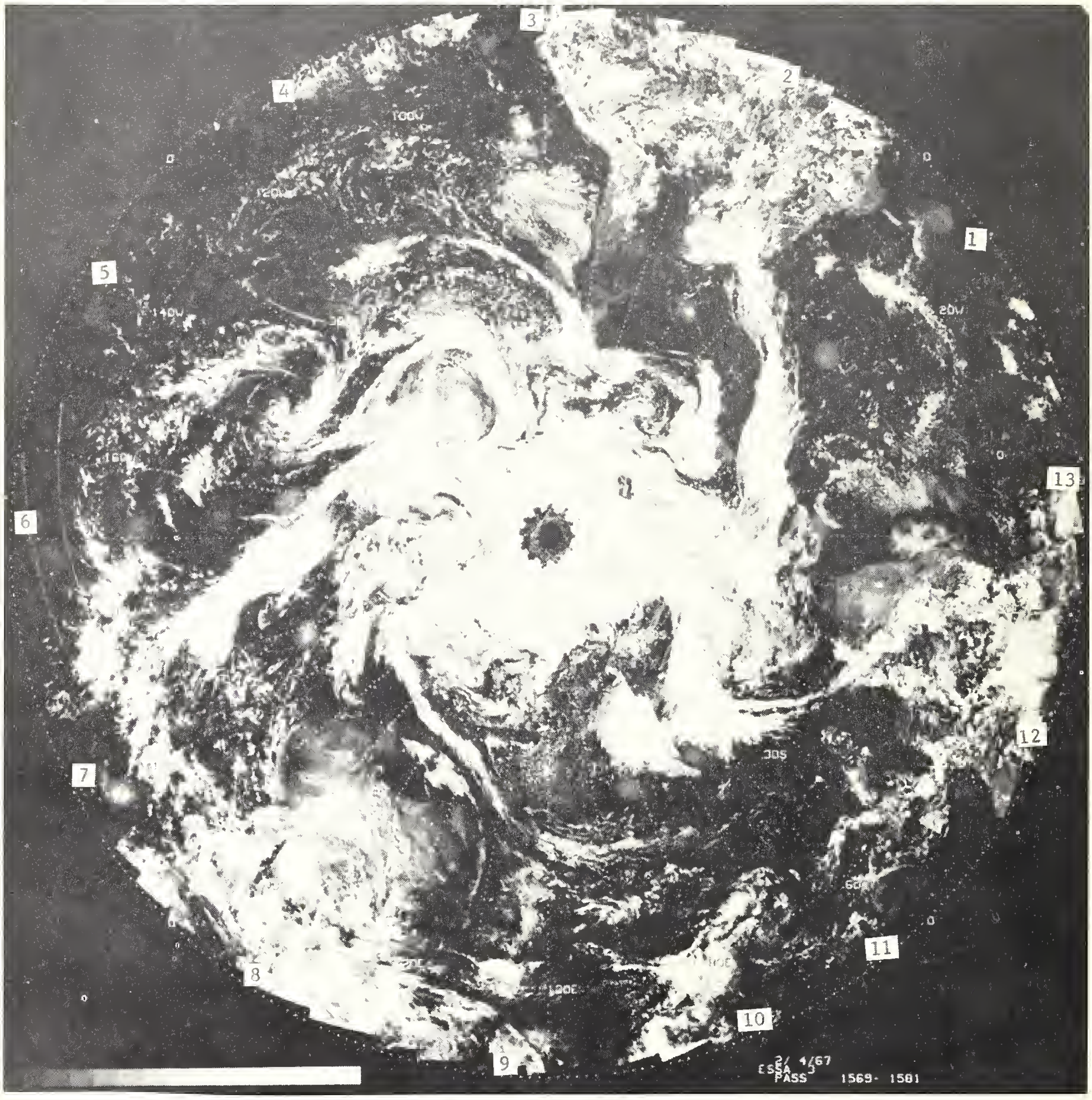
2/ 4/67
ESSA 3
PASS 1569- 1581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100W
120W
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140W
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30S
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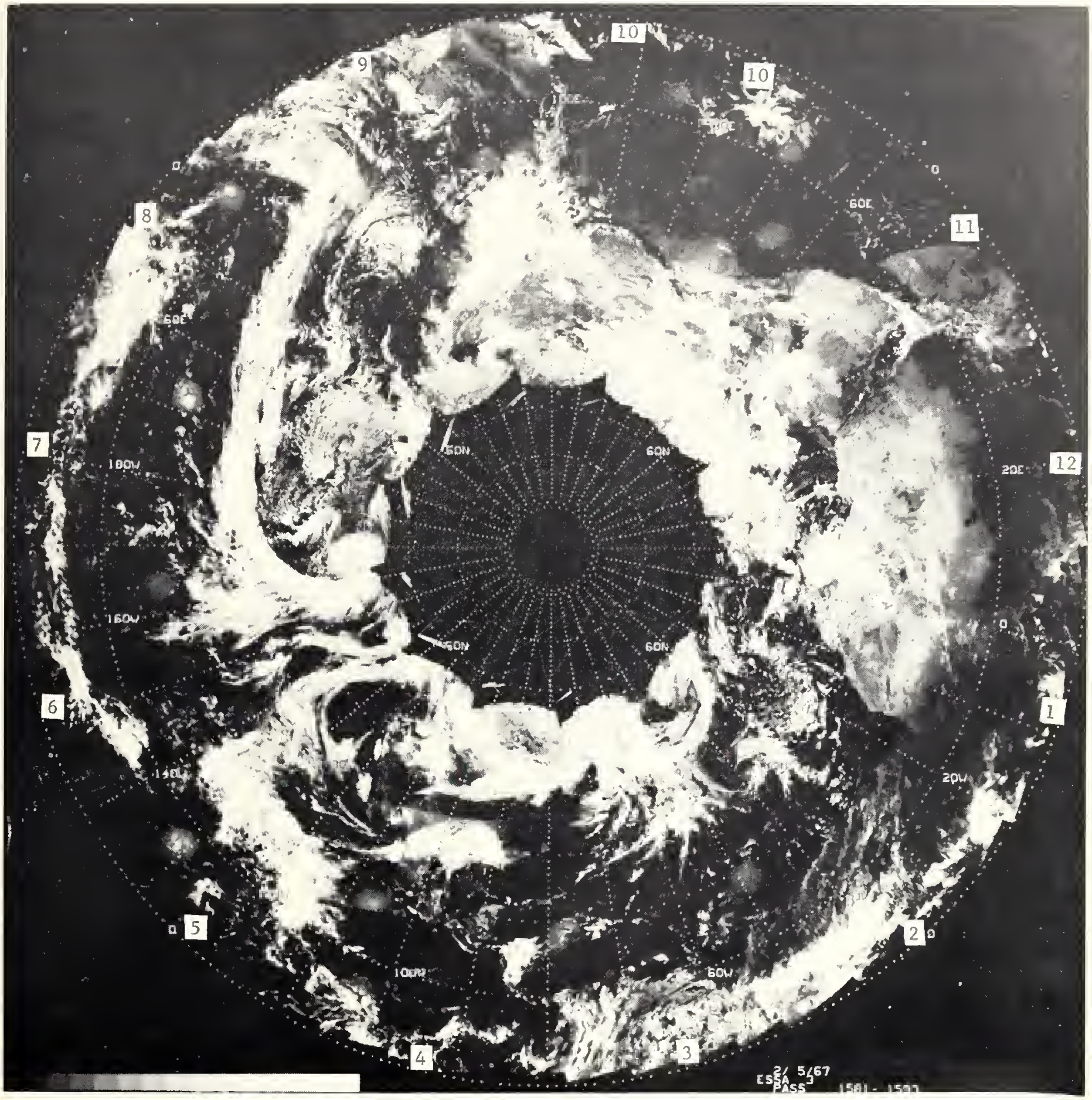
2/ 4/67
ESSA 3
PASS 1569- 1581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100E
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140E
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160E
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180W
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60N
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20E
160W
60N
60N
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140W
20W
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100W
60W
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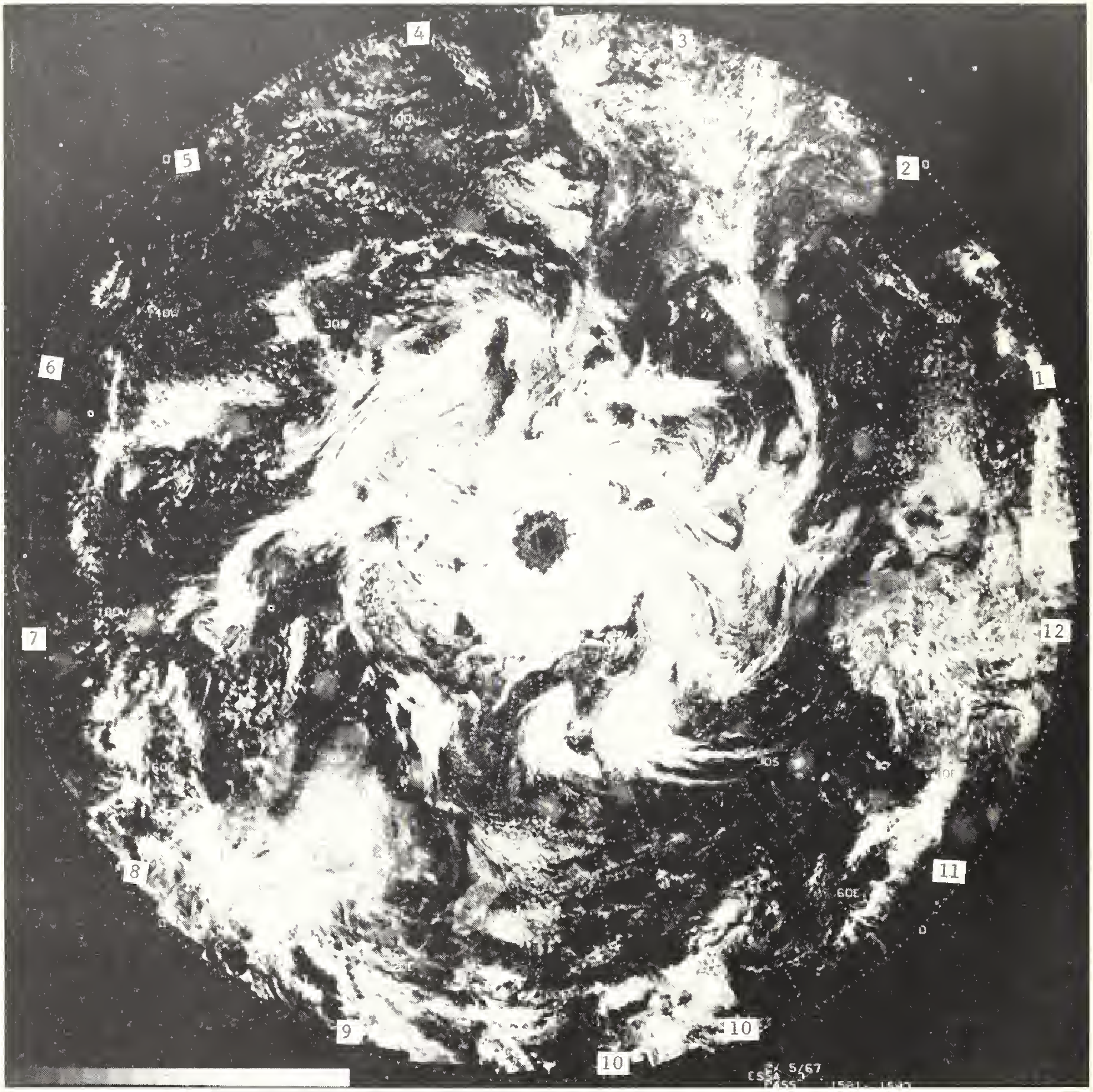
2/ 5/67
ESSA 3
PASS 1581 - 1590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100W
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140W
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180W
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60E
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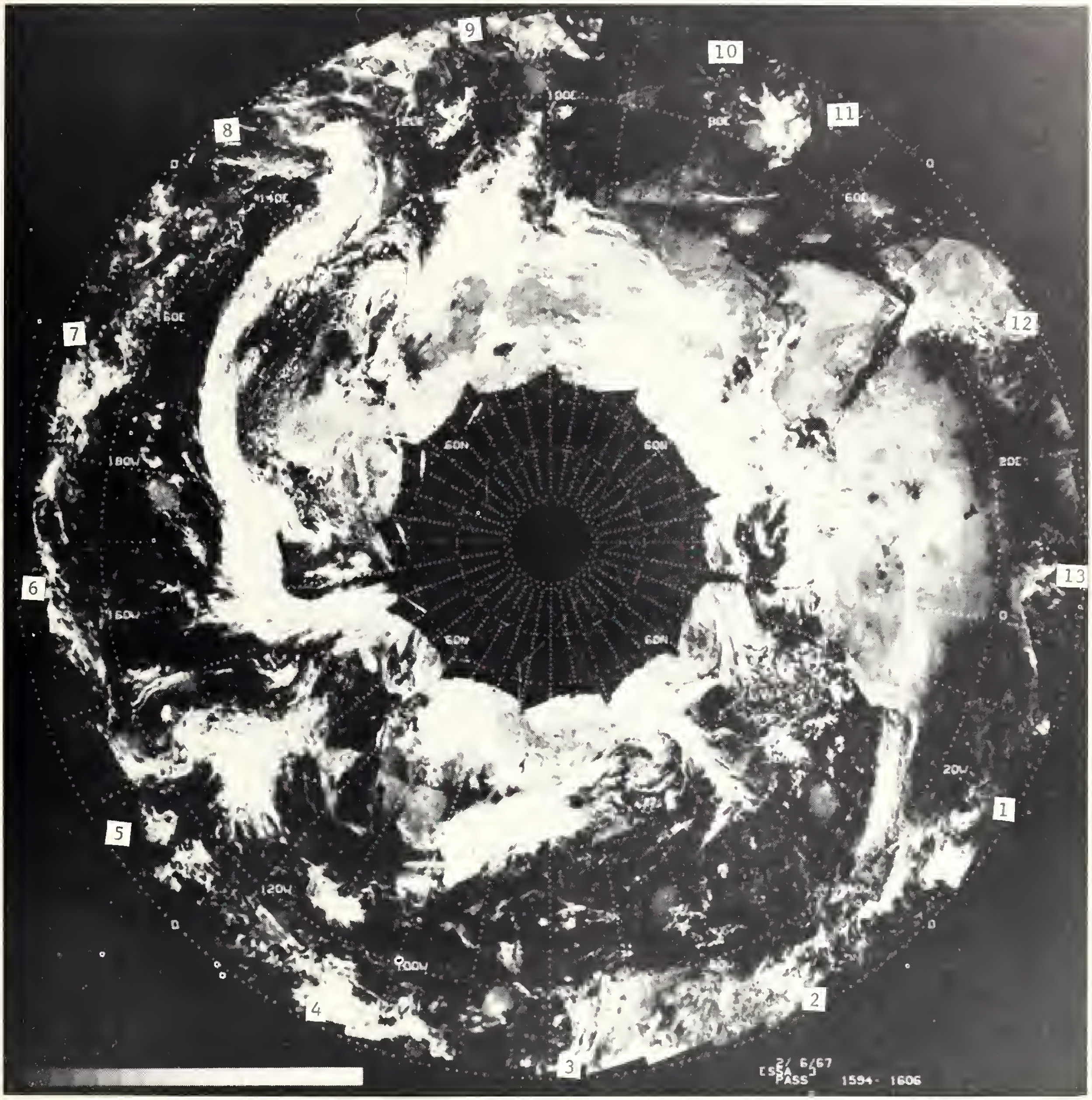
ESSA 5/67
PASS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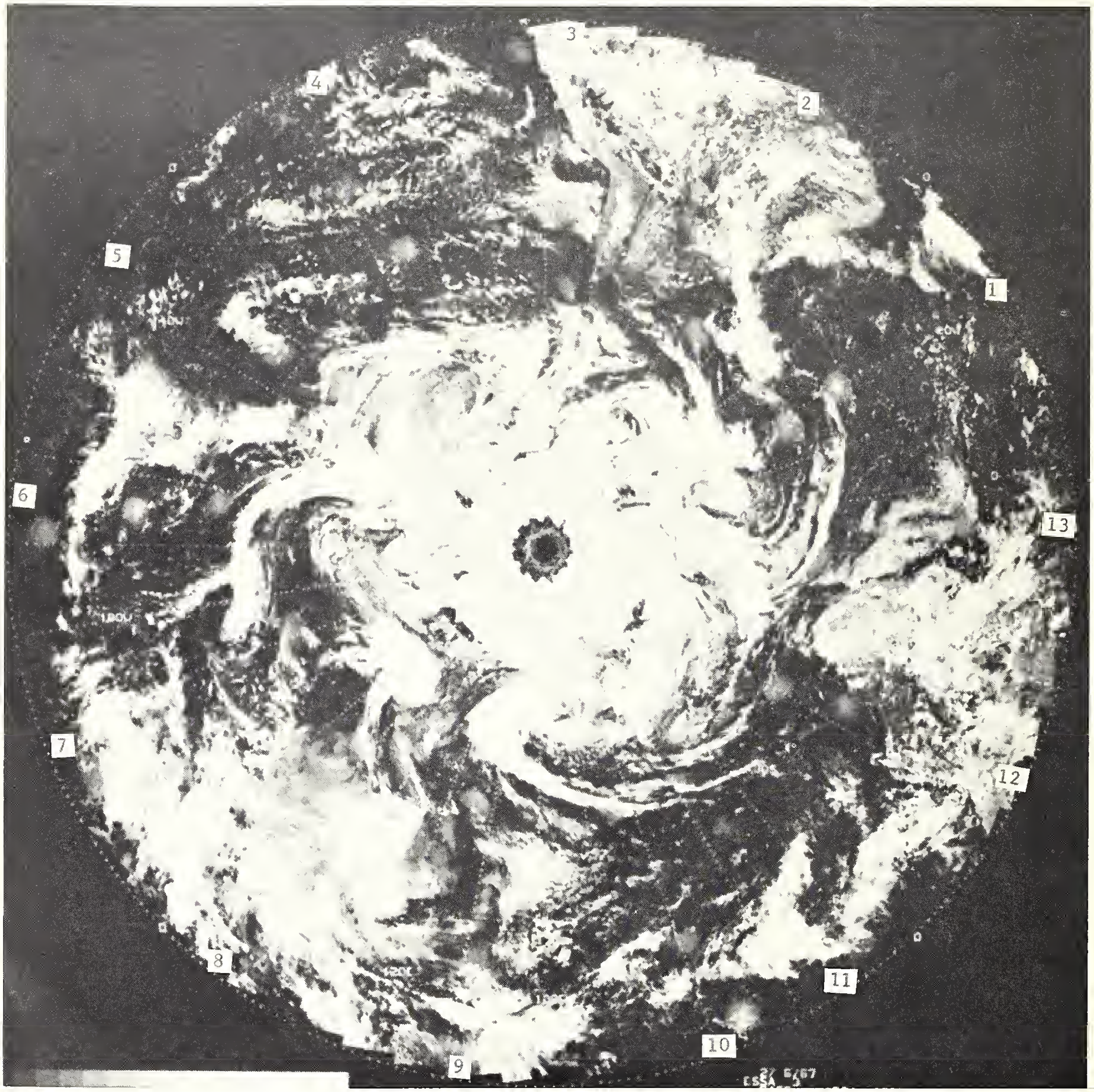
2/ 6/67
ESSA 3
PASS 1594- 1606



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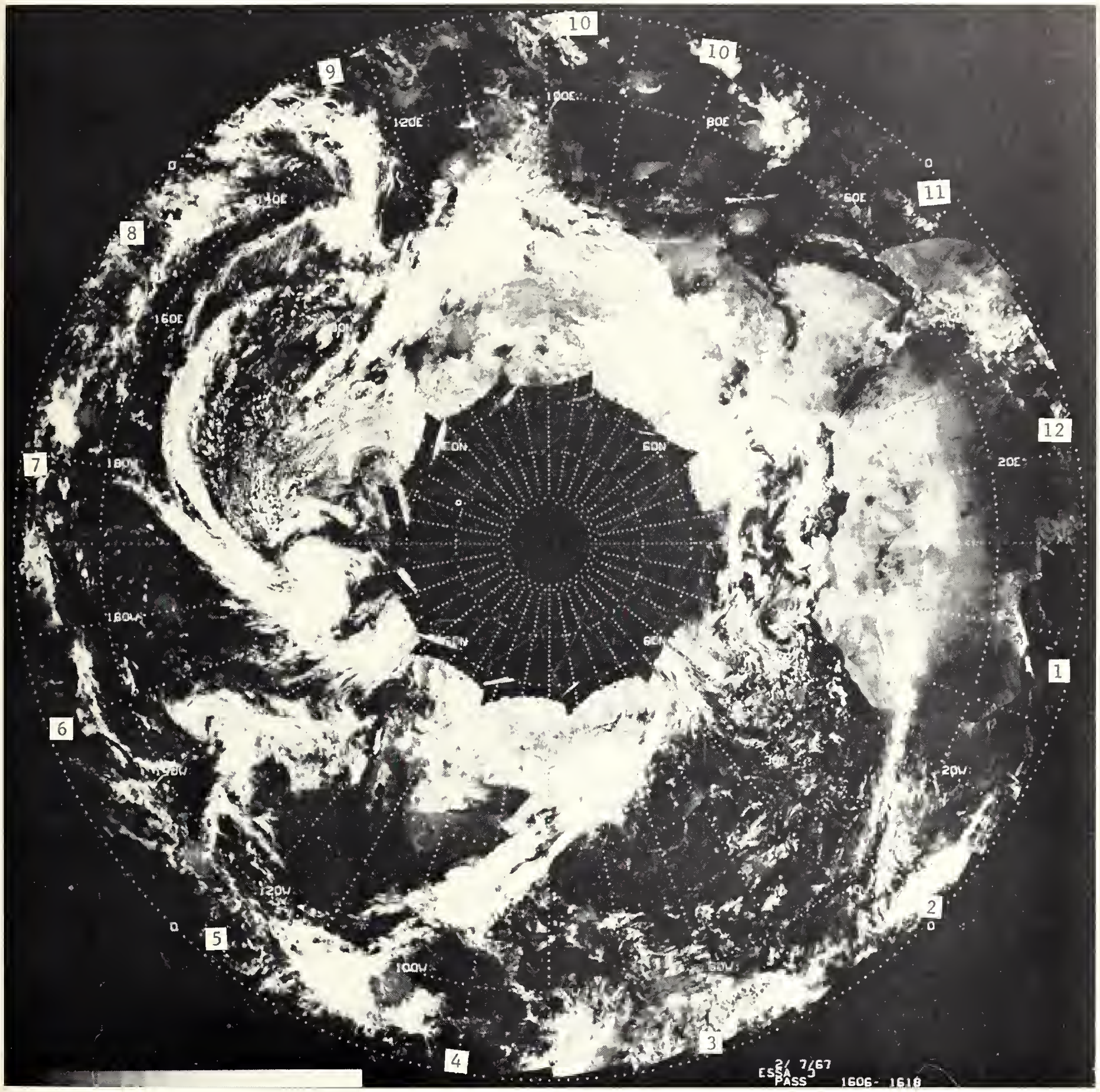
27 6/67
ESSA 3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140E
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30N
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60N
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20E
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180W
160W
60N
60N
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140W
30N
20W
120W
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100W
80W
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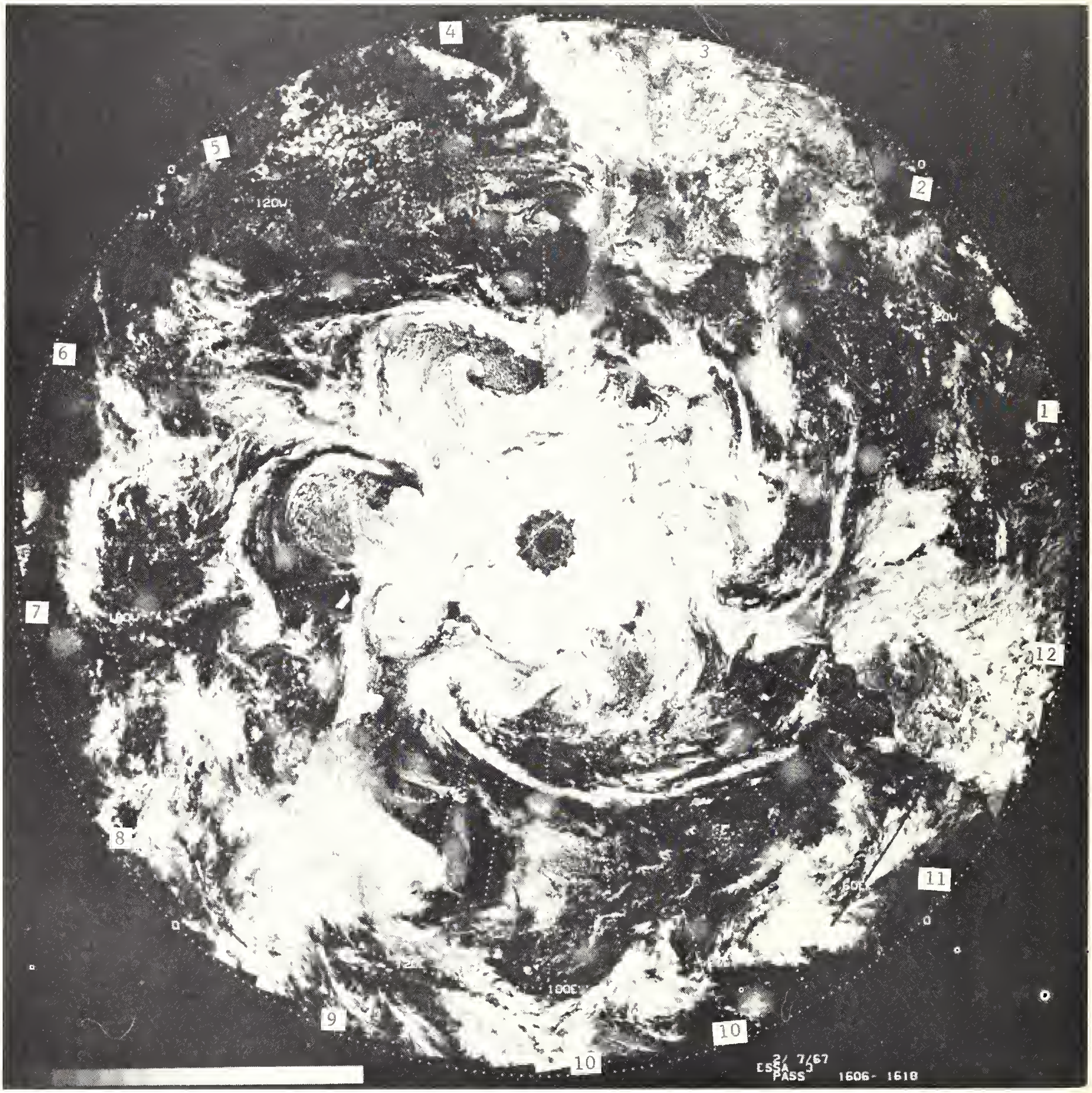
3
2/ 7/67
ESSA 3
PASS 1606- 1618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120W
20W
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60E
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120E
180E
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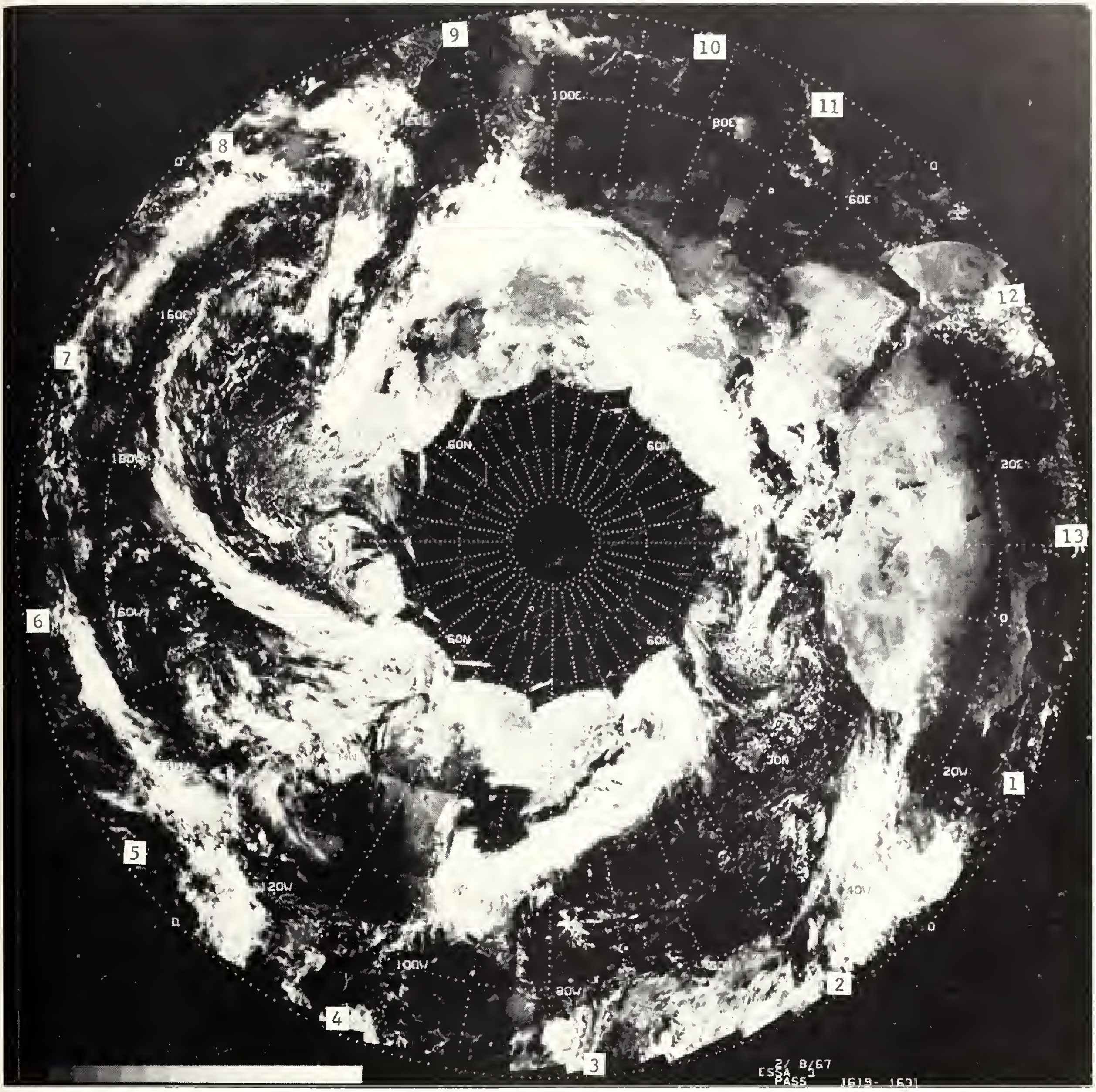
2/ 7/67
ESSA 3
PASS 1606- 1618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20E
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160W
60N
60N
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20W
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40W
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4
100W
80W
60W
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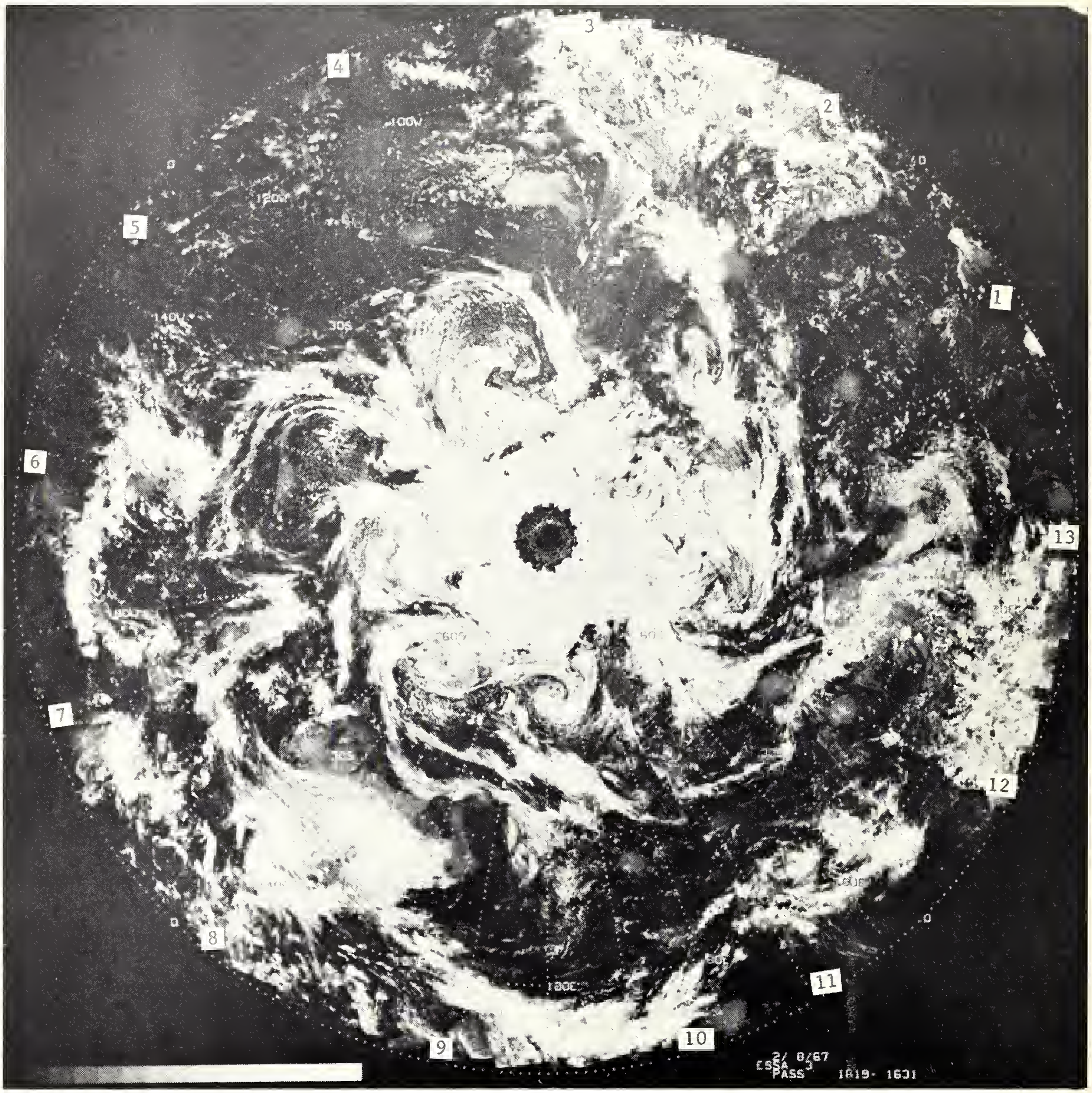
3
2/ 8/67
ESSA 3
PASS 1619- 1631


3
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100W
120W
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140W
30S
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60S
60S
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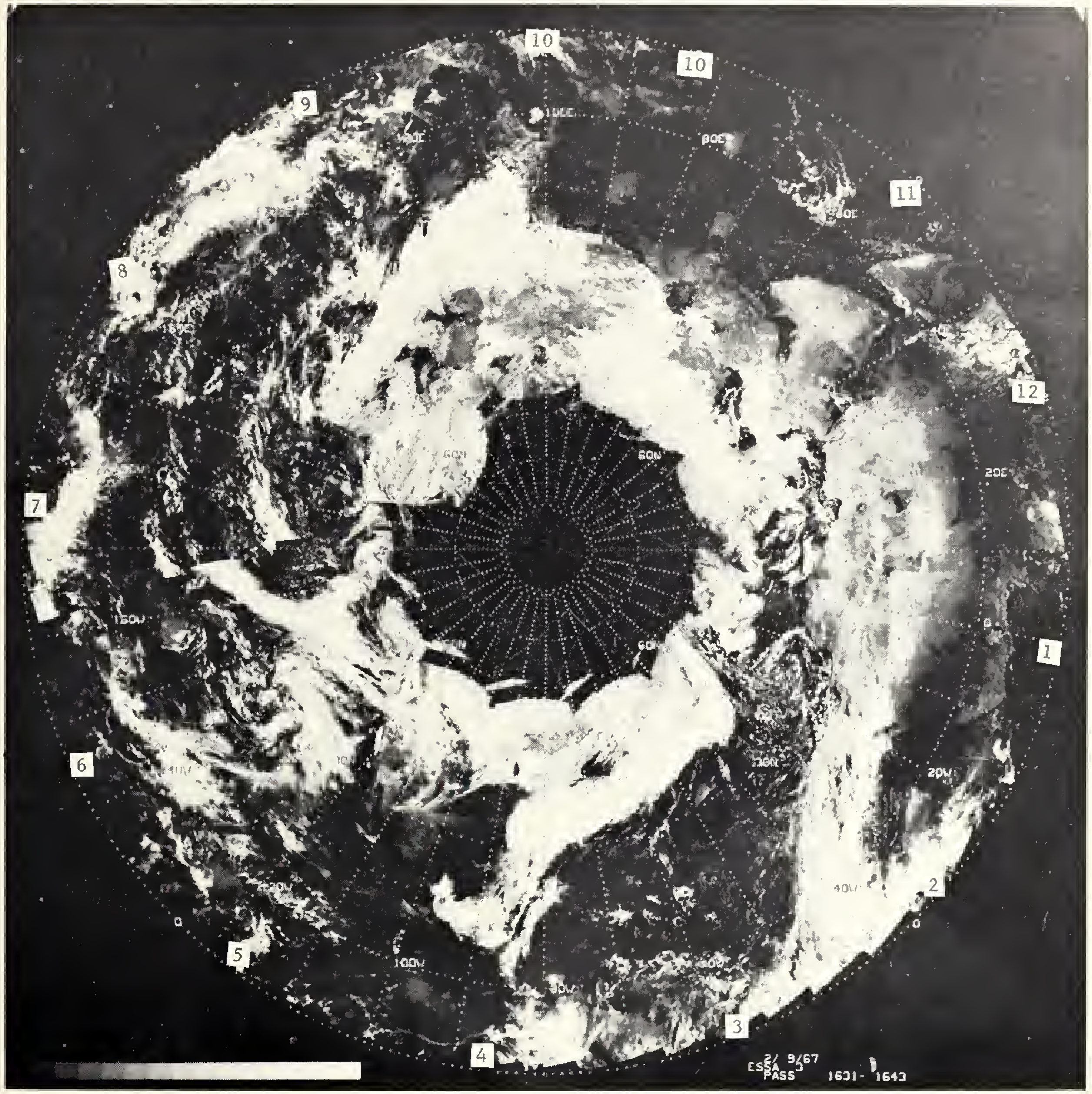
12
8
11
180E
10
9
2/ 8/67
ESSA 3
PASS 1619- 1631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100E
80E
60E
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60W
20E
150W
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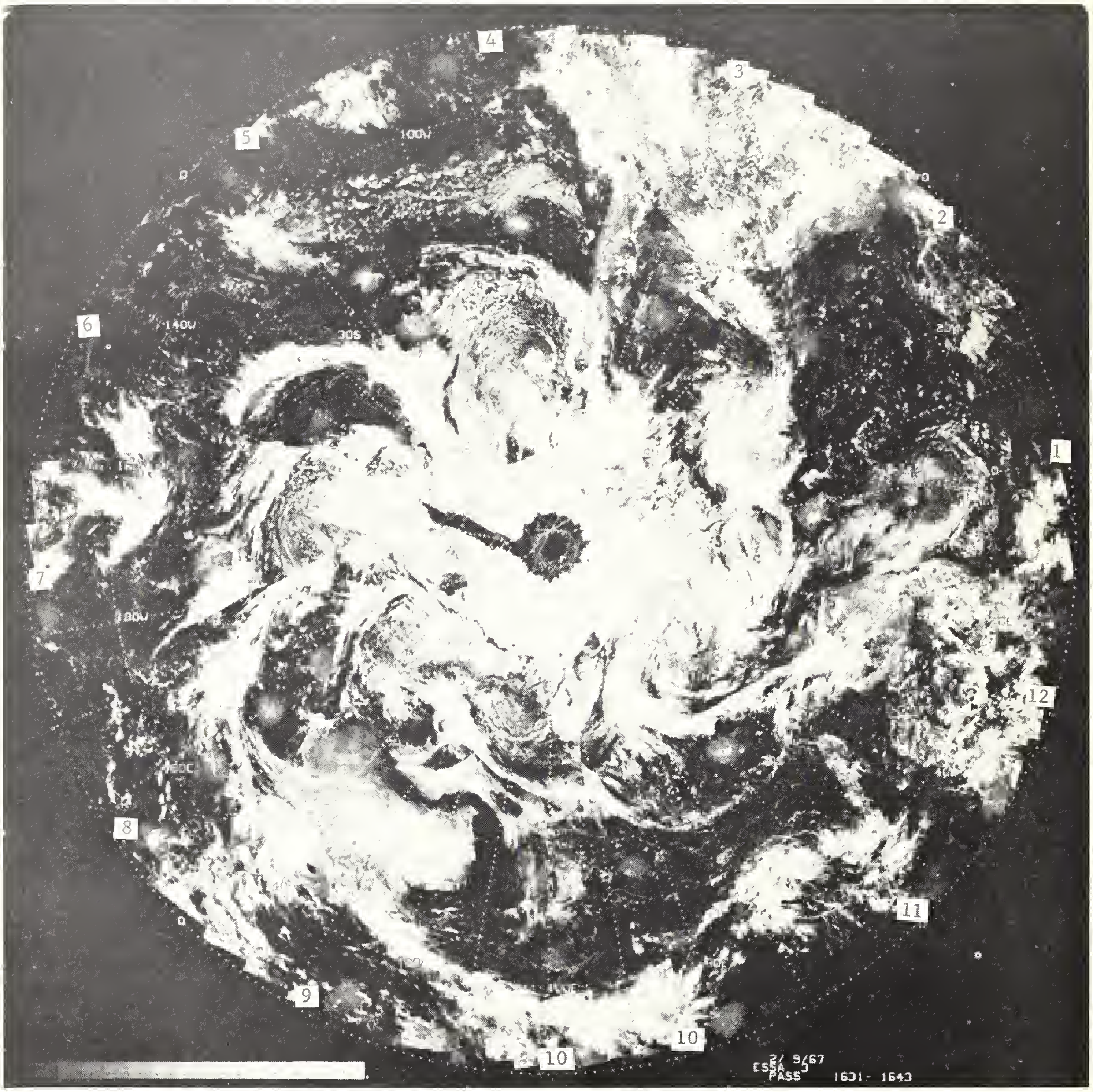
20W
40W
120W
100W
80W
2/ 9/67
ESSA 3
PASS 1631- 1643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100W
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140W
30S
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180W
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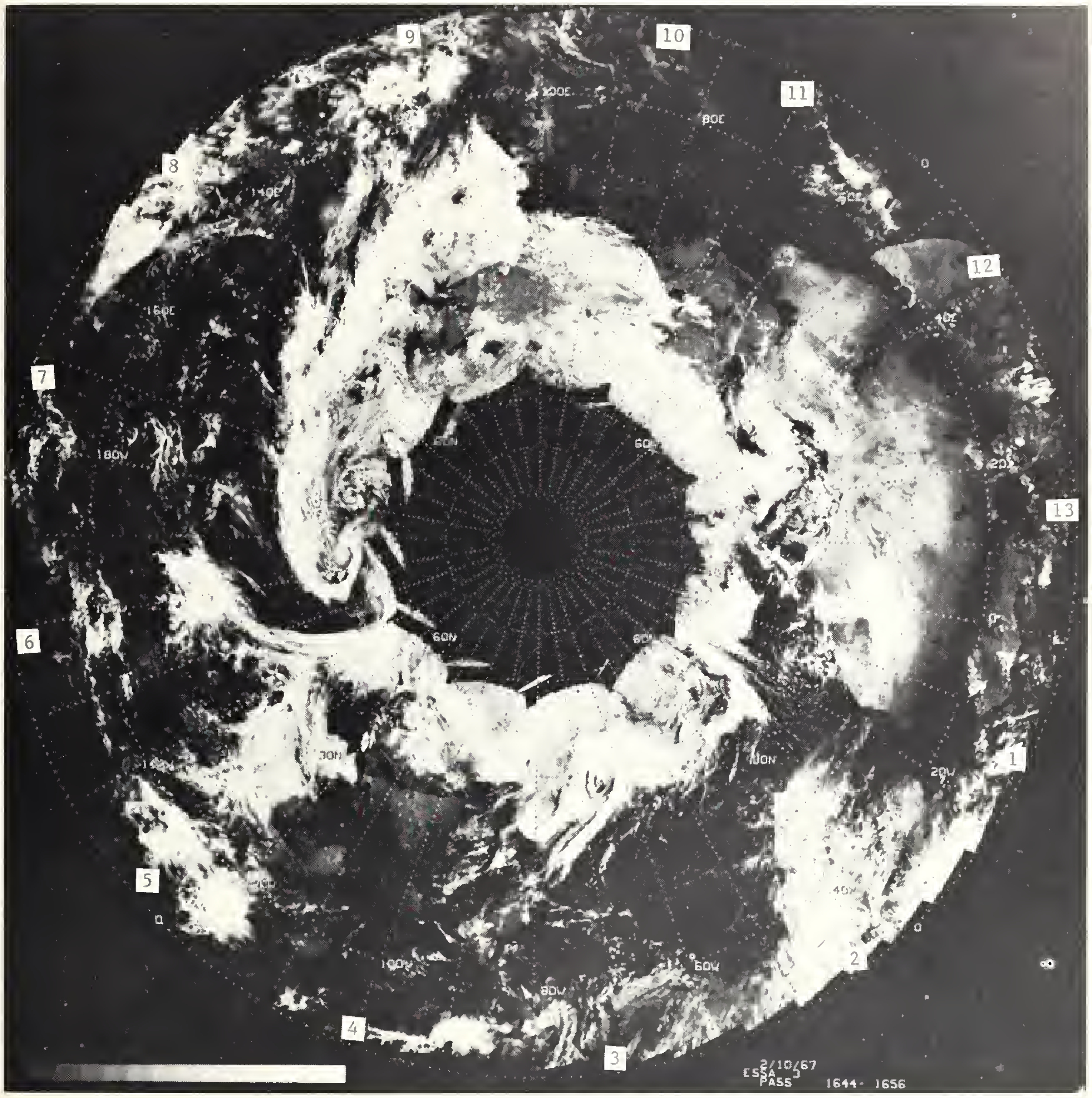
2/ 9/67
ESSA 3
PASS 1631- 1643



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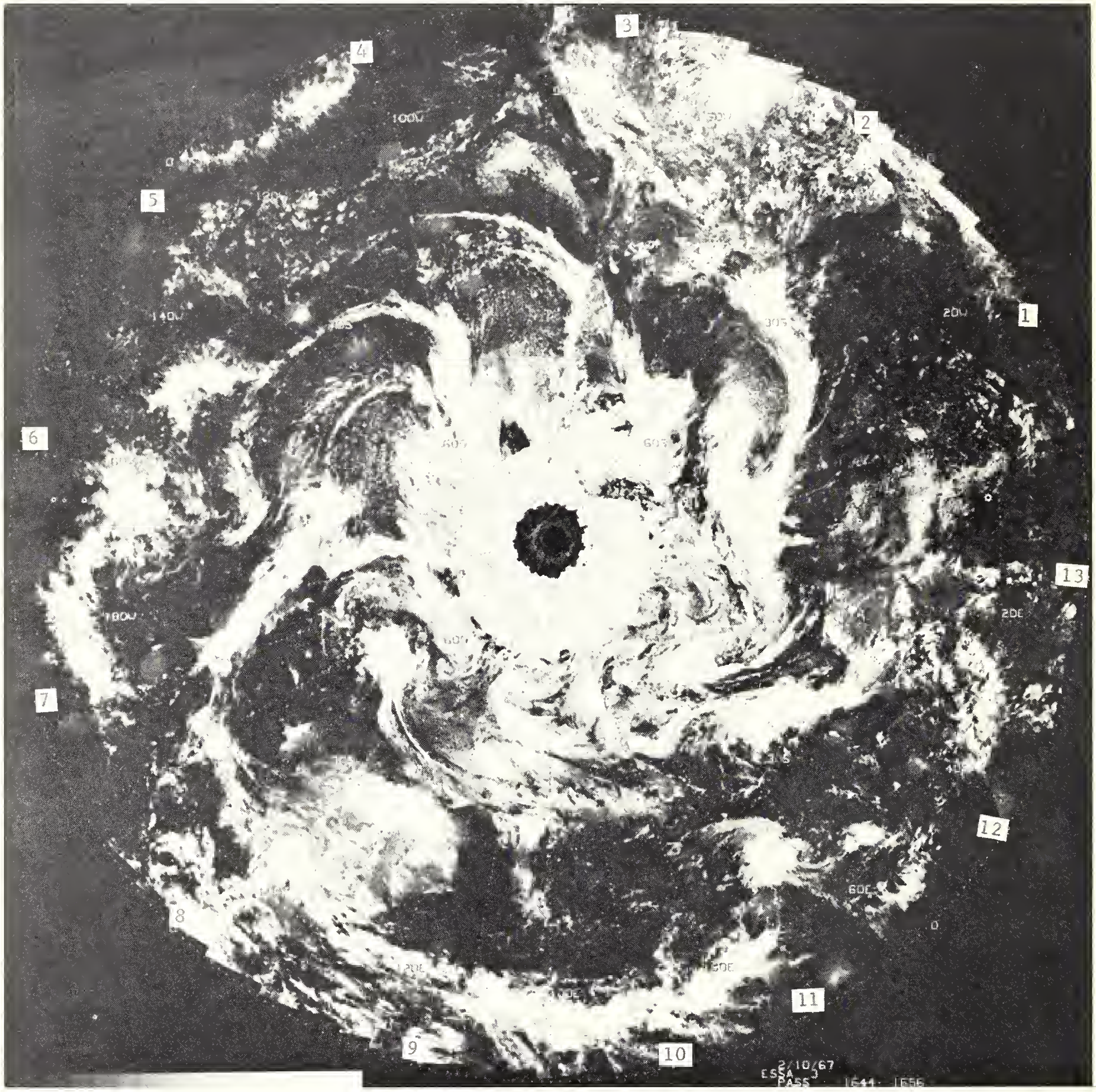
ESSA 3
PASS 1644- 1656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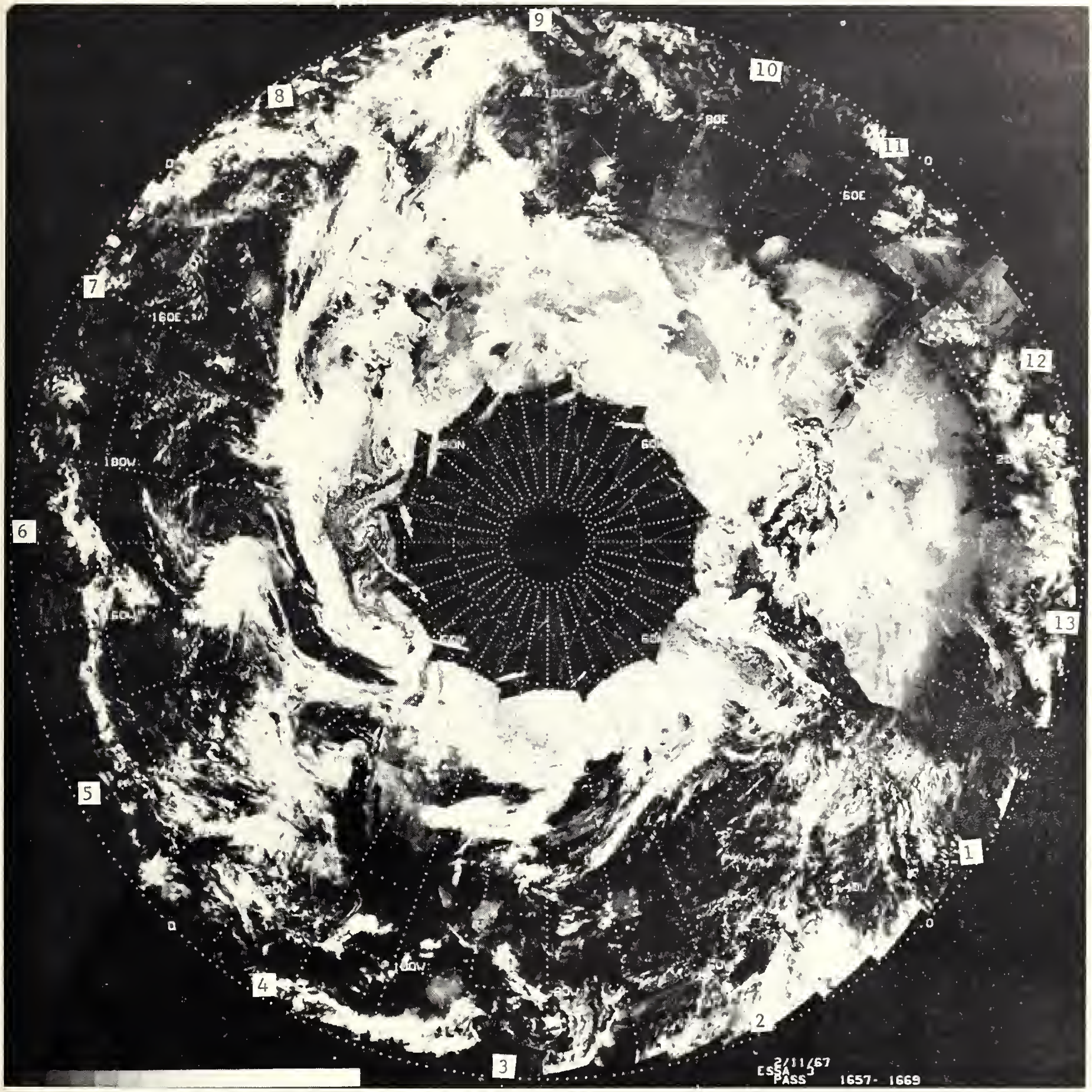
2/10/67
ESSA 3
PASS
1641 1656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160W
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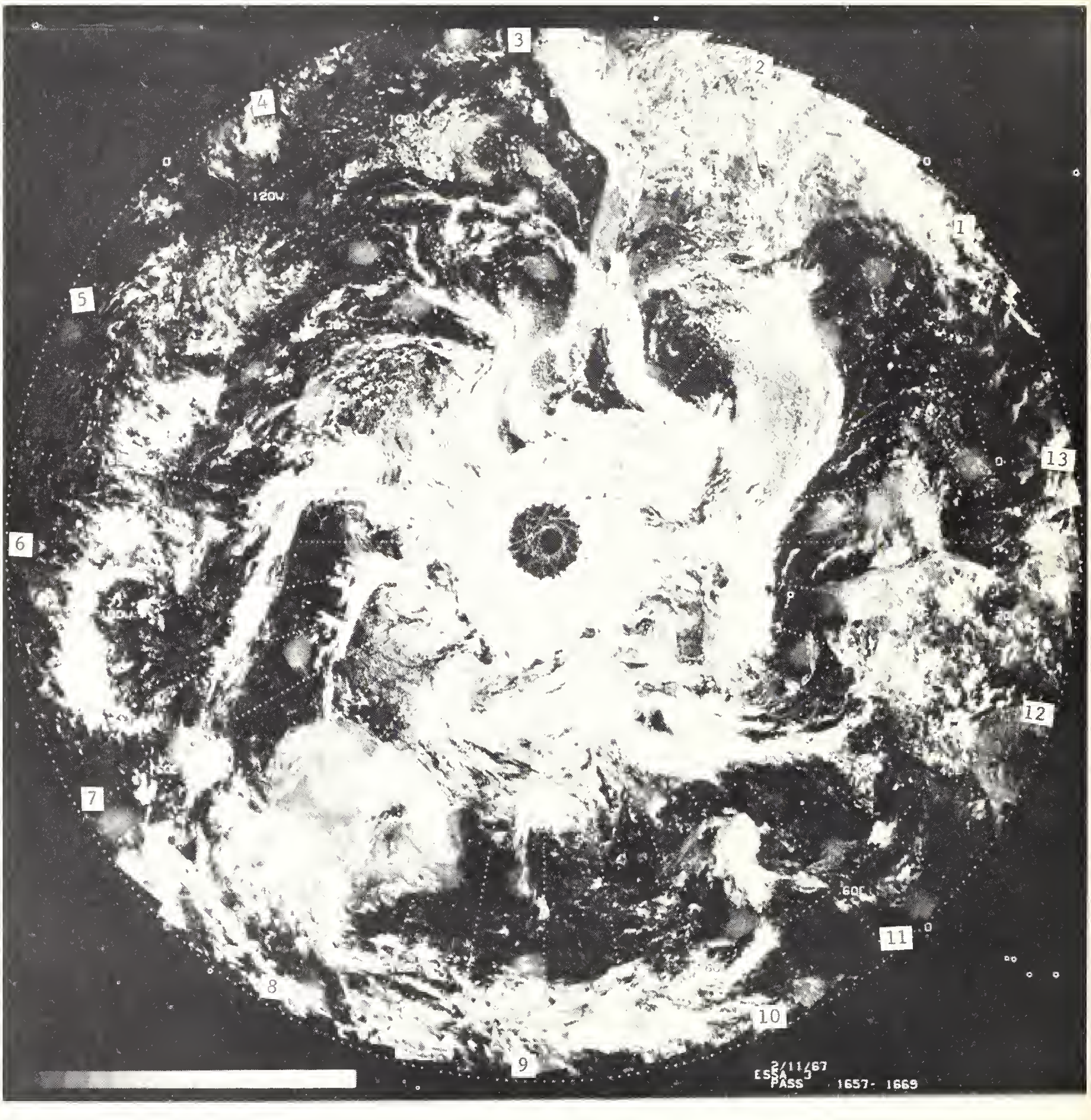
2/11/67
ESSA 3
PASS 1657- 1669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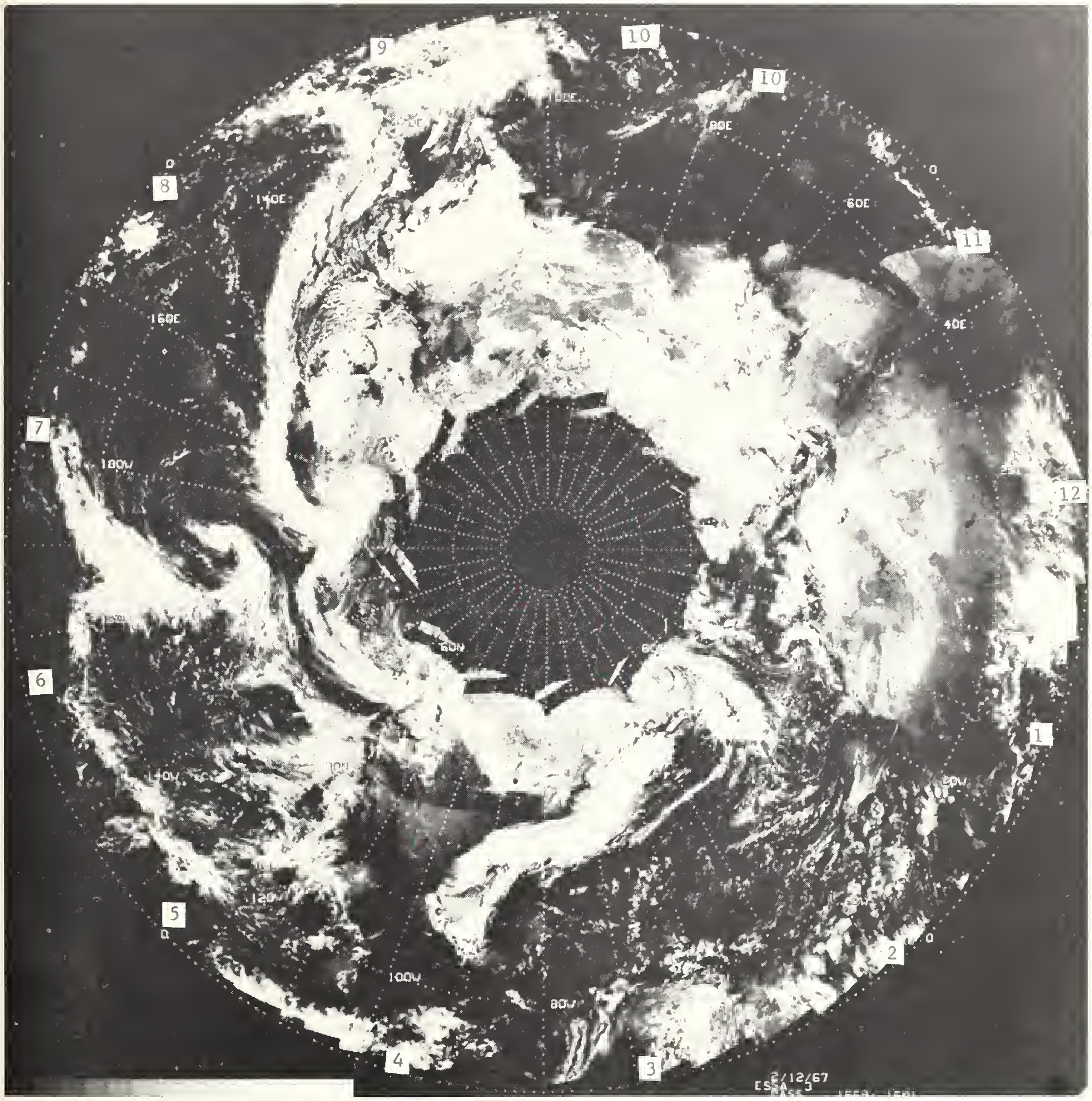
ESSA 3
PASS 1657- 1669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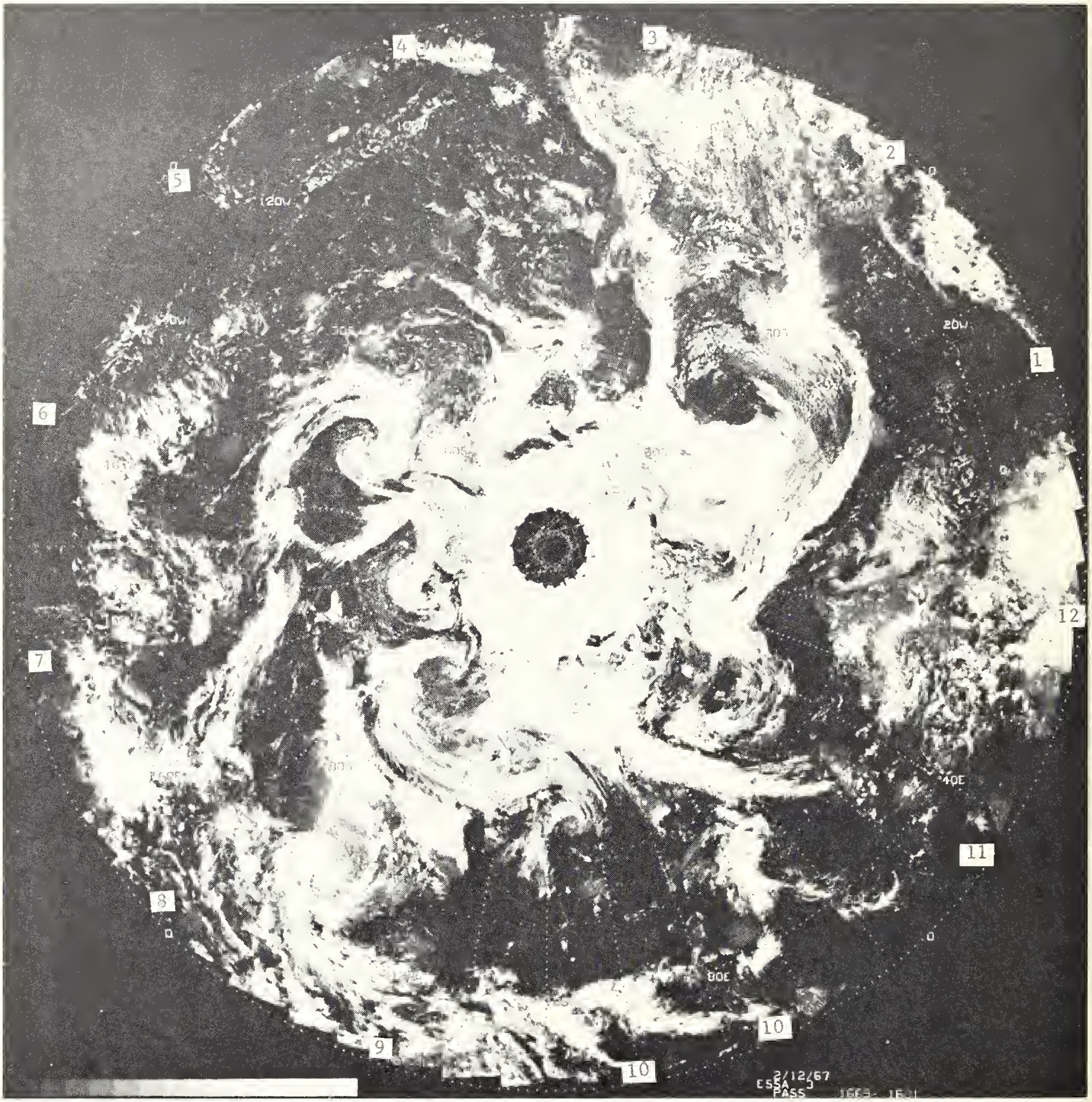
ESSA 3
12/67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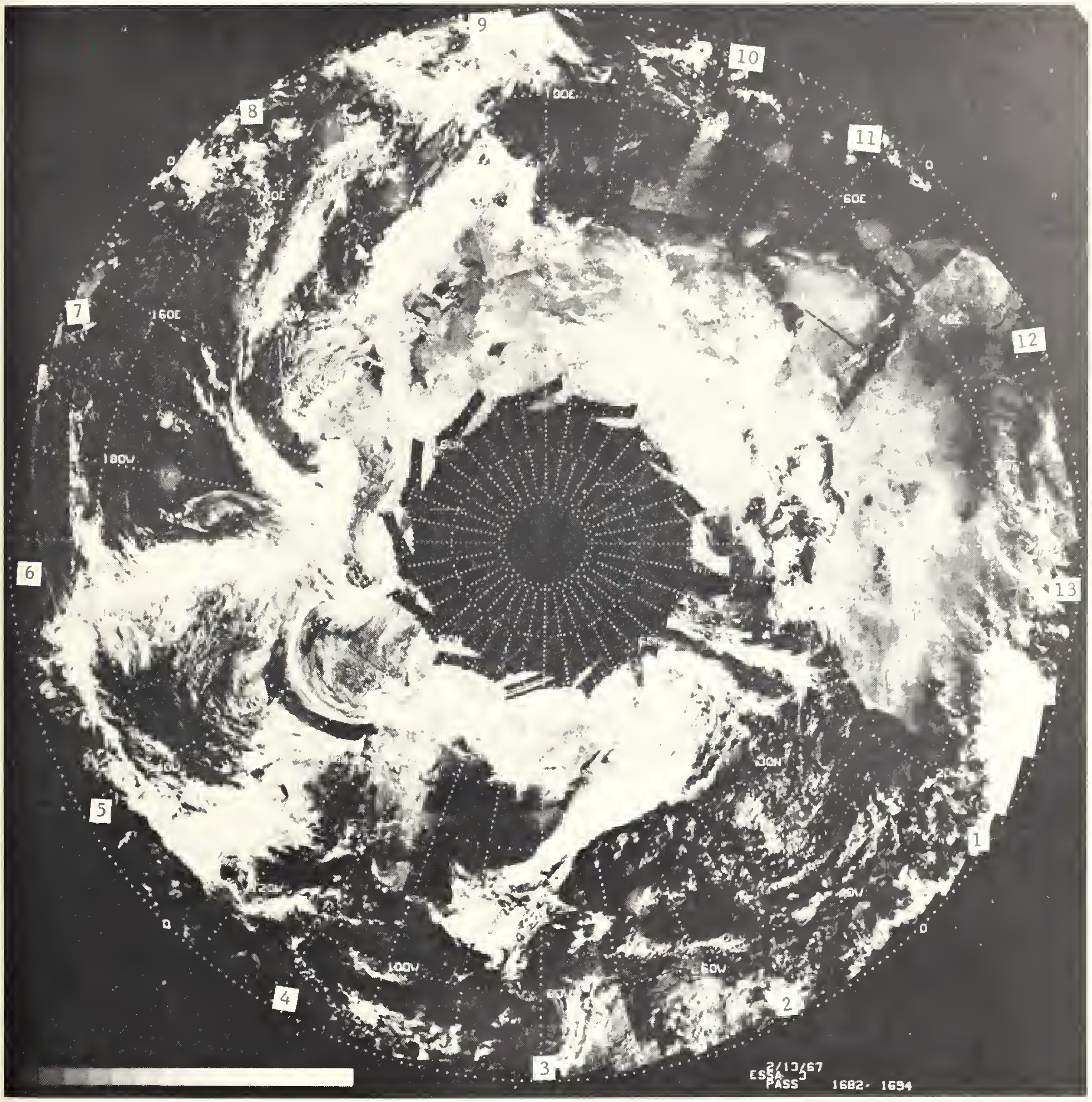
ESSA 3
PASS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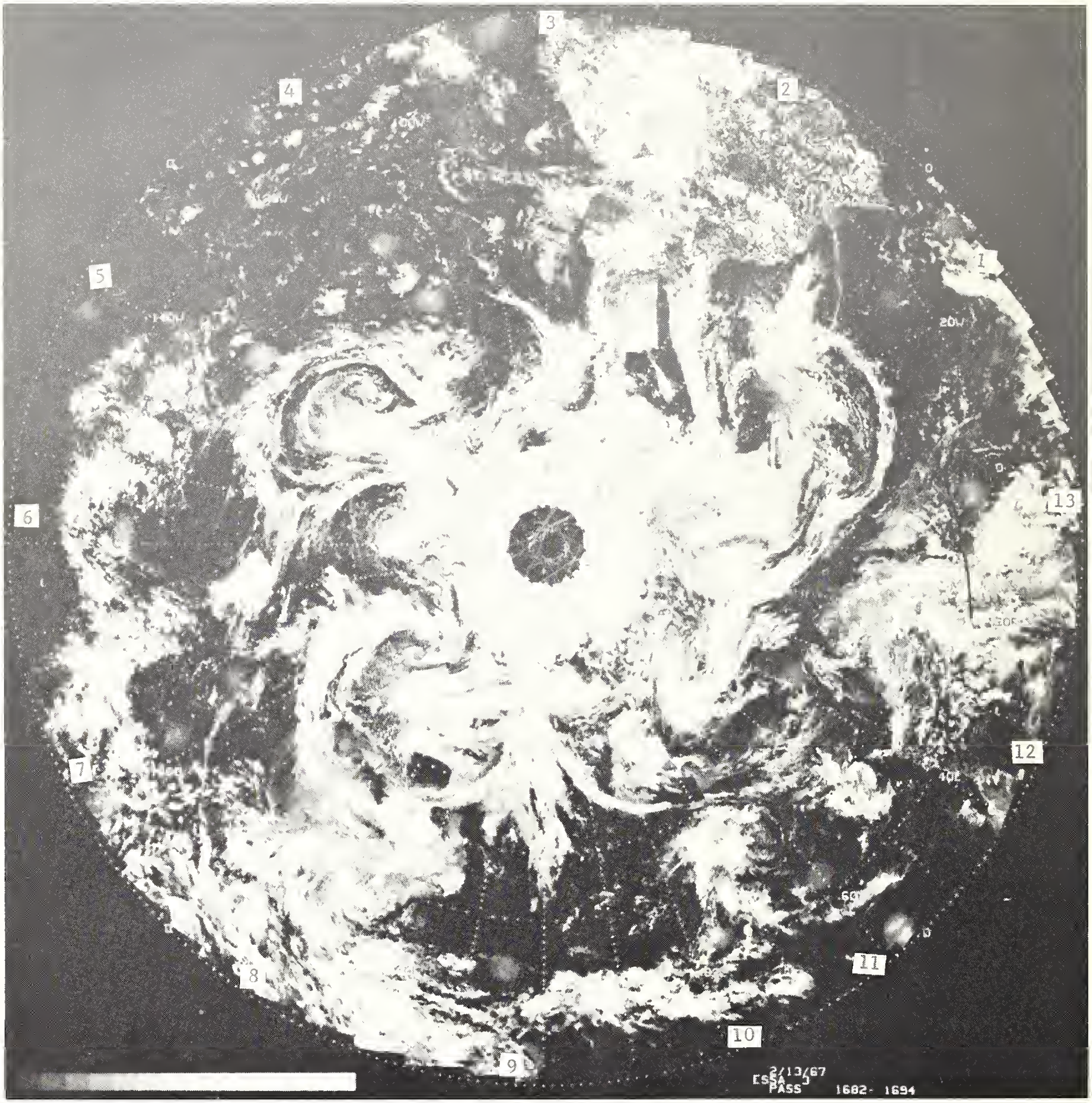
ESSA 3
PASS 1682- 1694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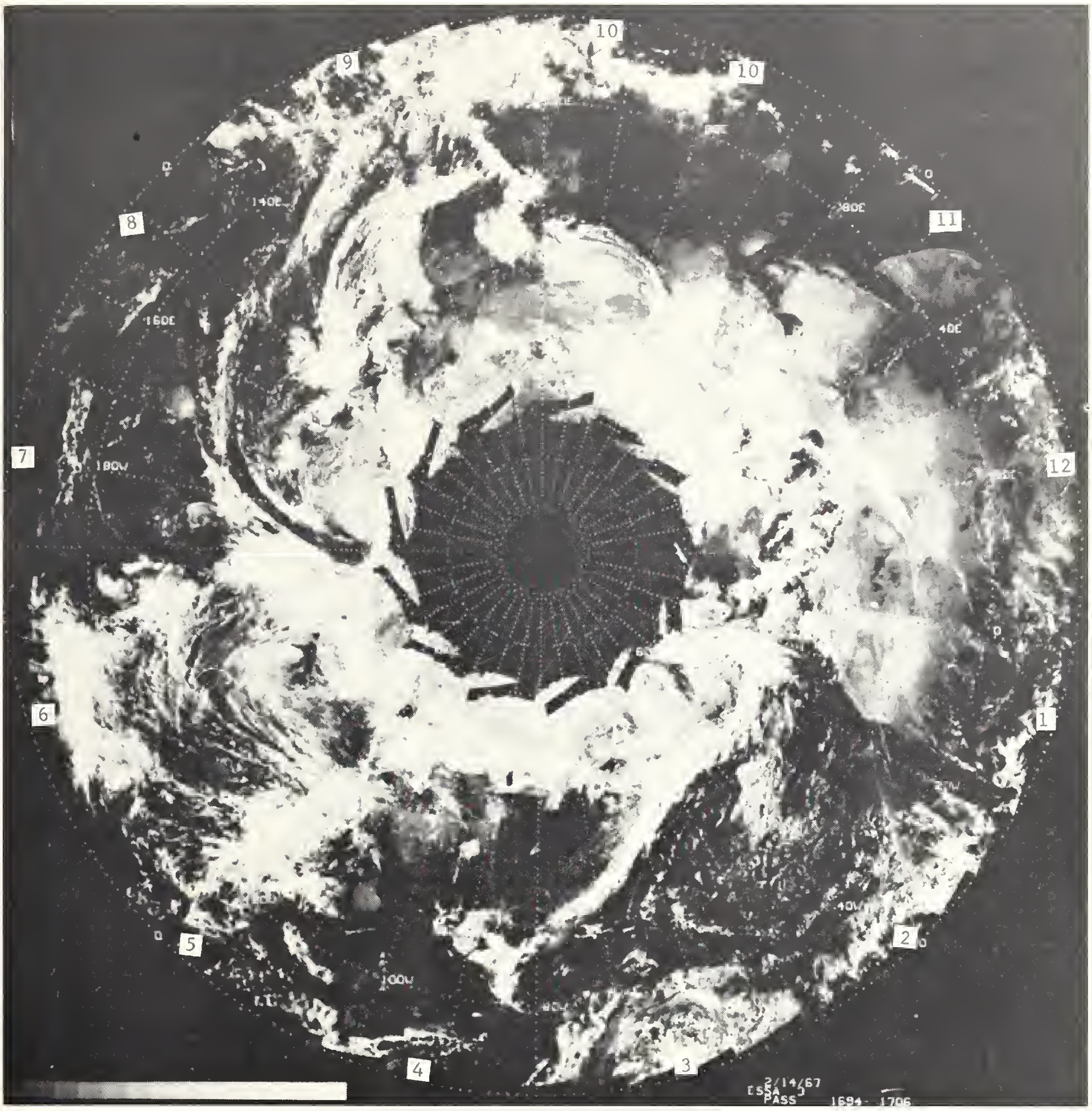
2/13/67
ESSA 3
PASS 1682- 1694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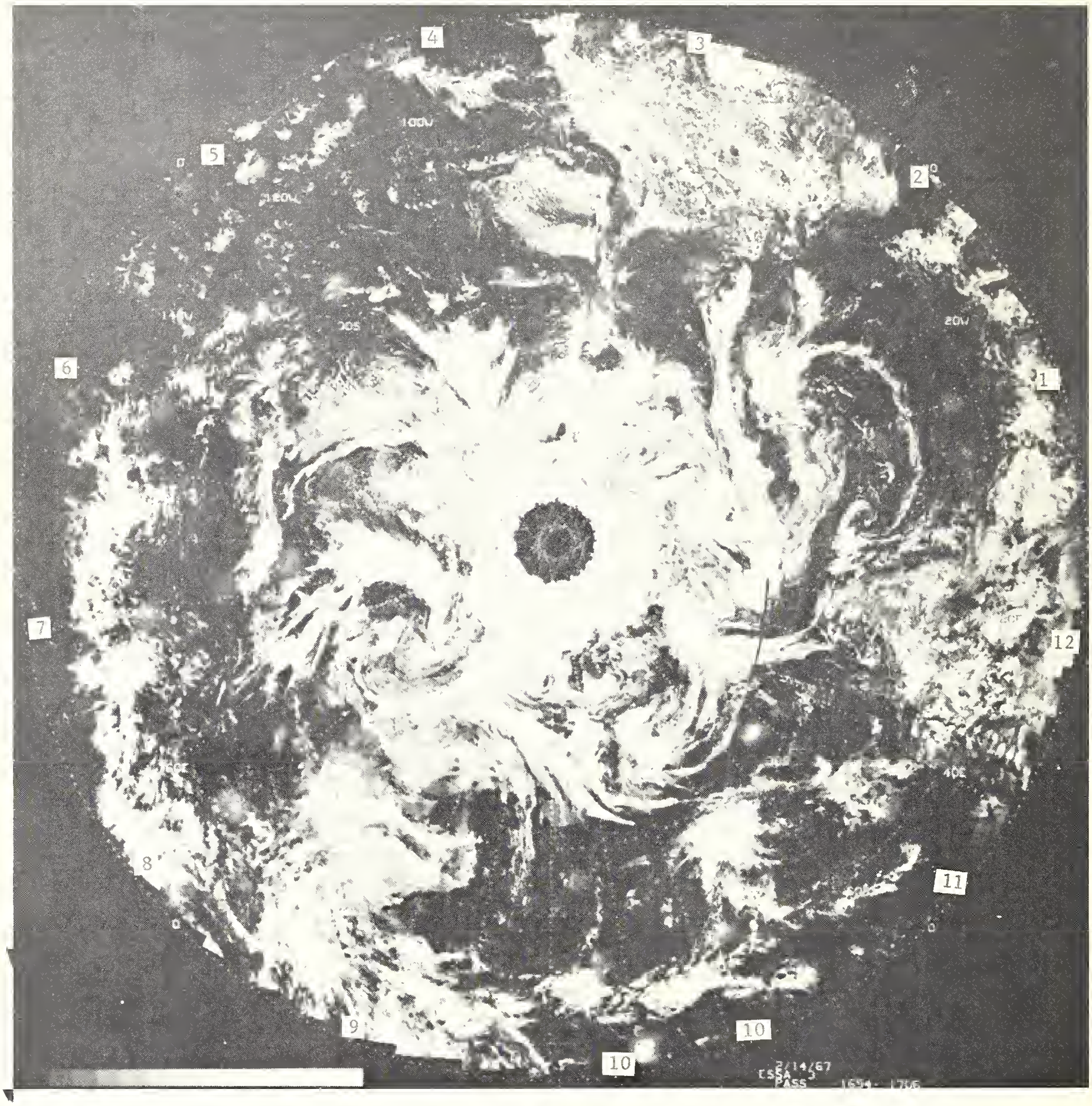
2/14/67
ESSA 3
PASS
1694- 1706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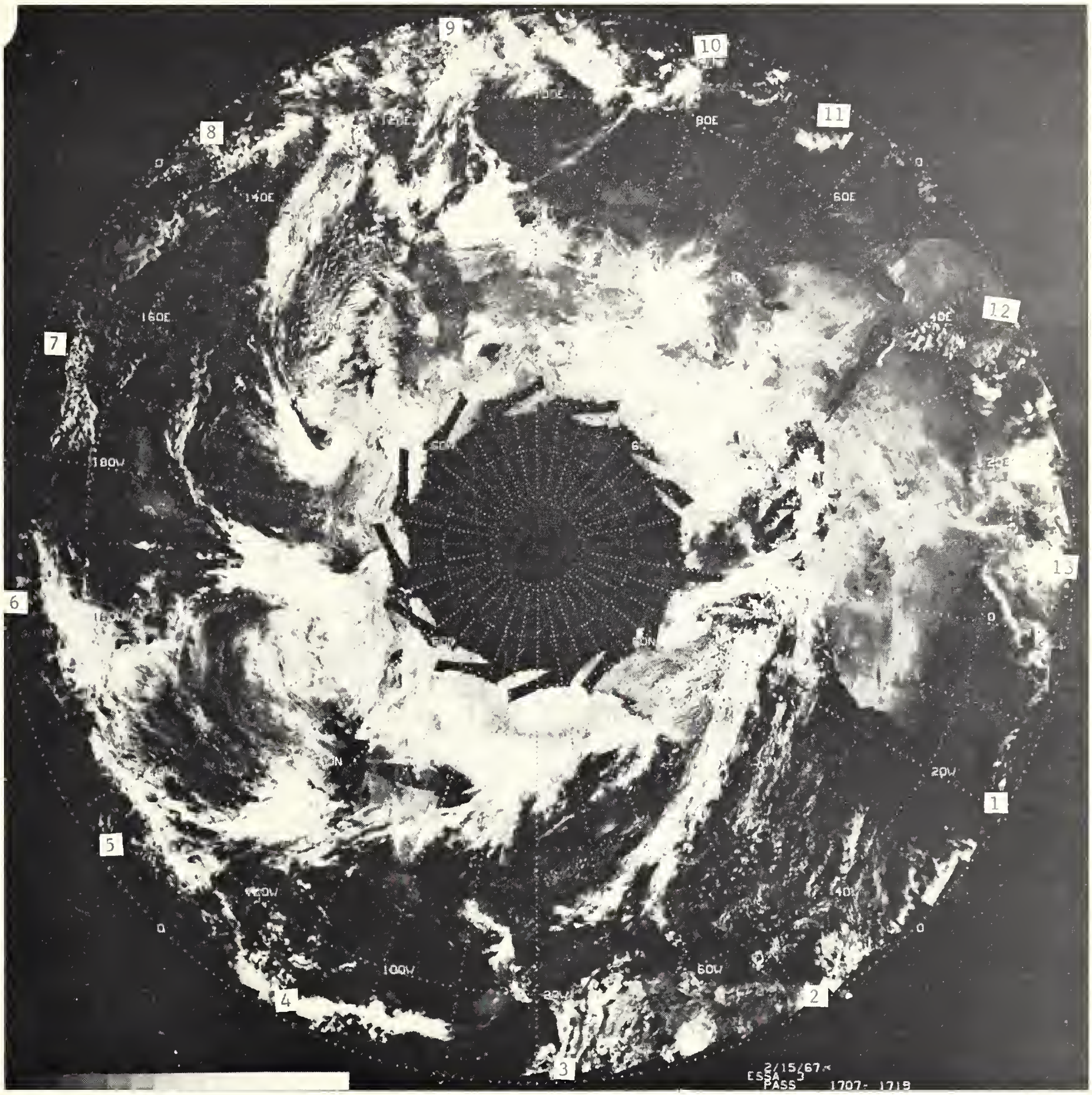
ESSA 3
PASS 1654-1706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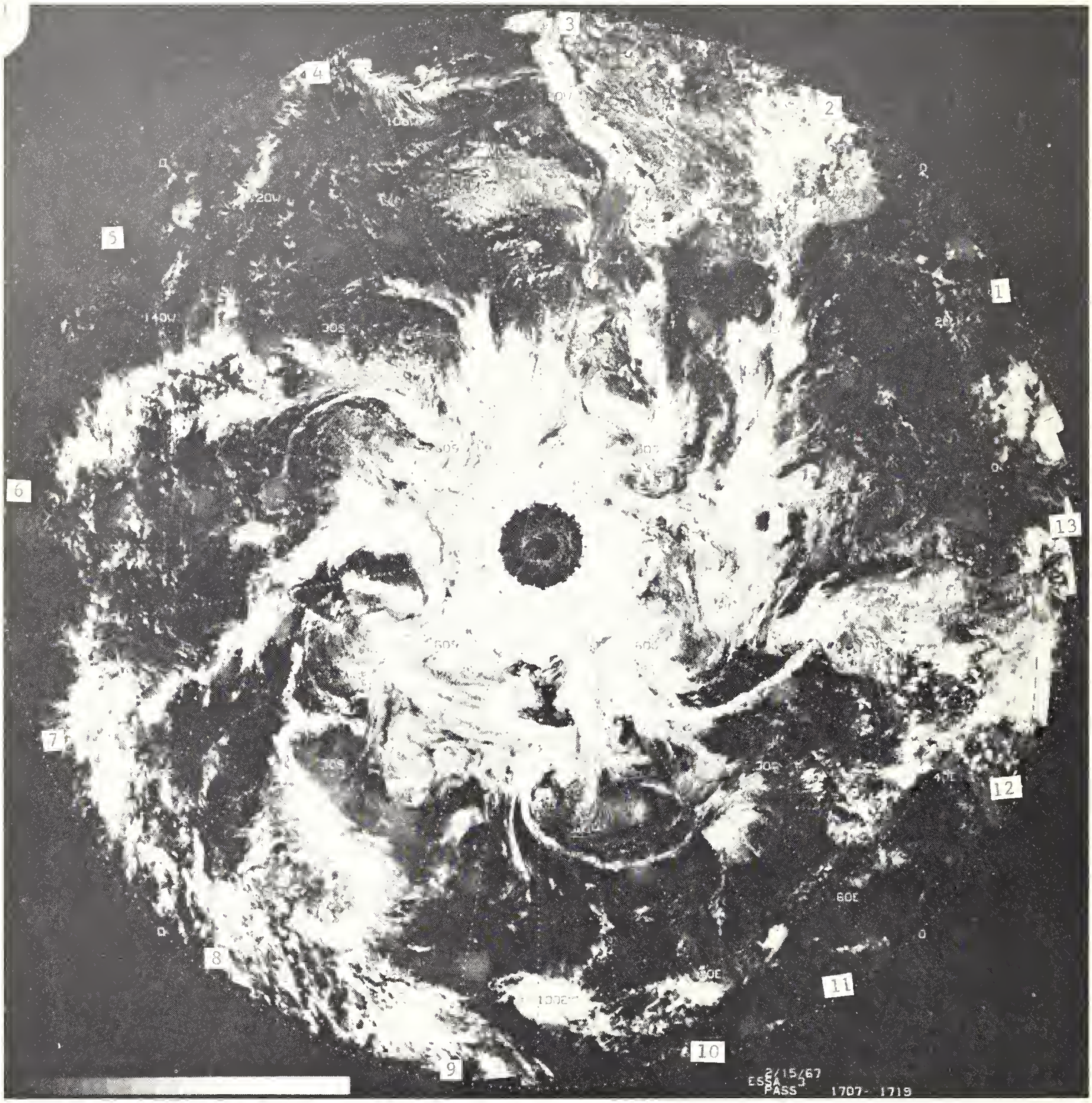
2/15/67
ESSA 3
PASS 1707- 1719



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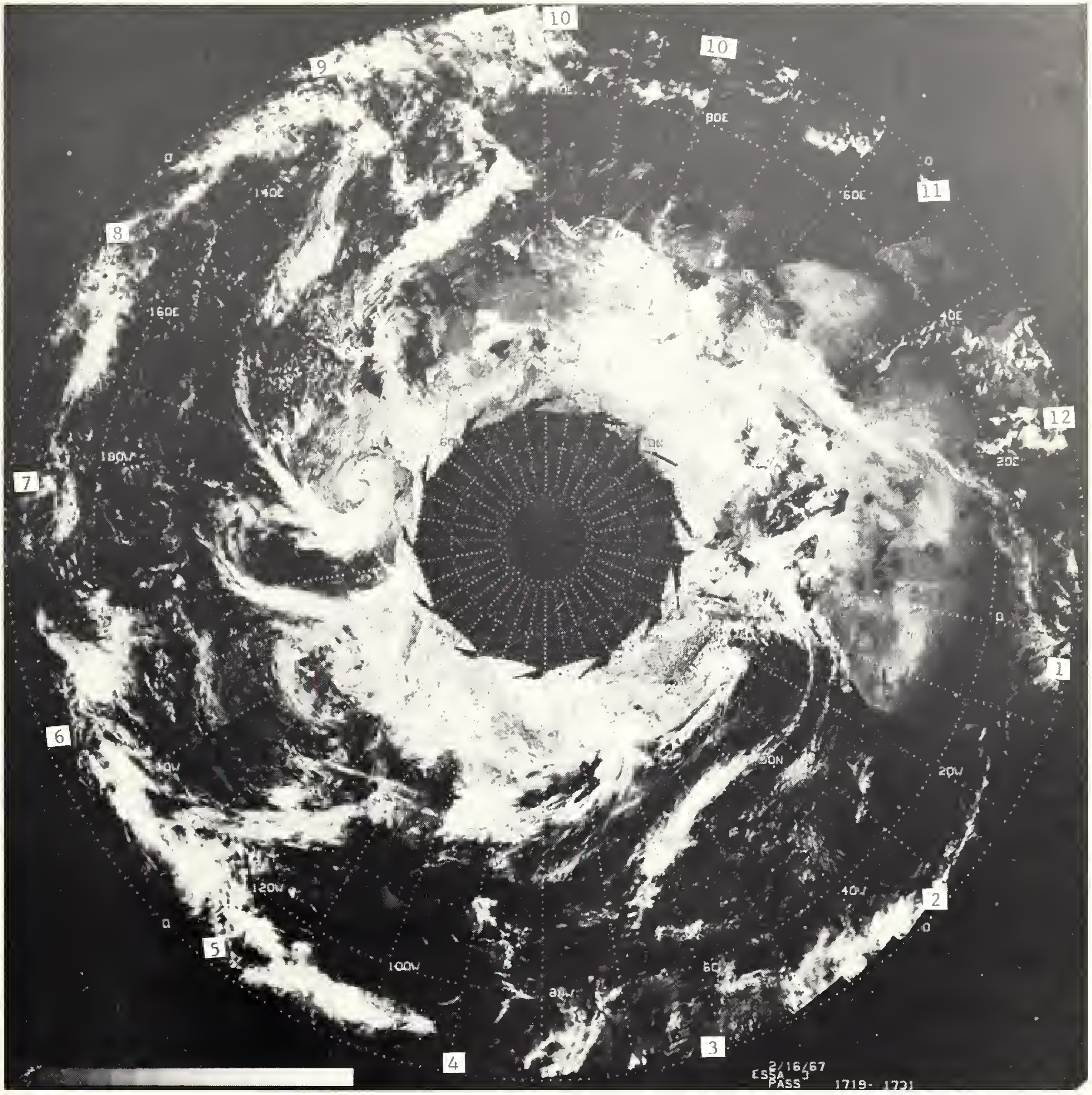
ESSA 3
PASS 1707- 1719



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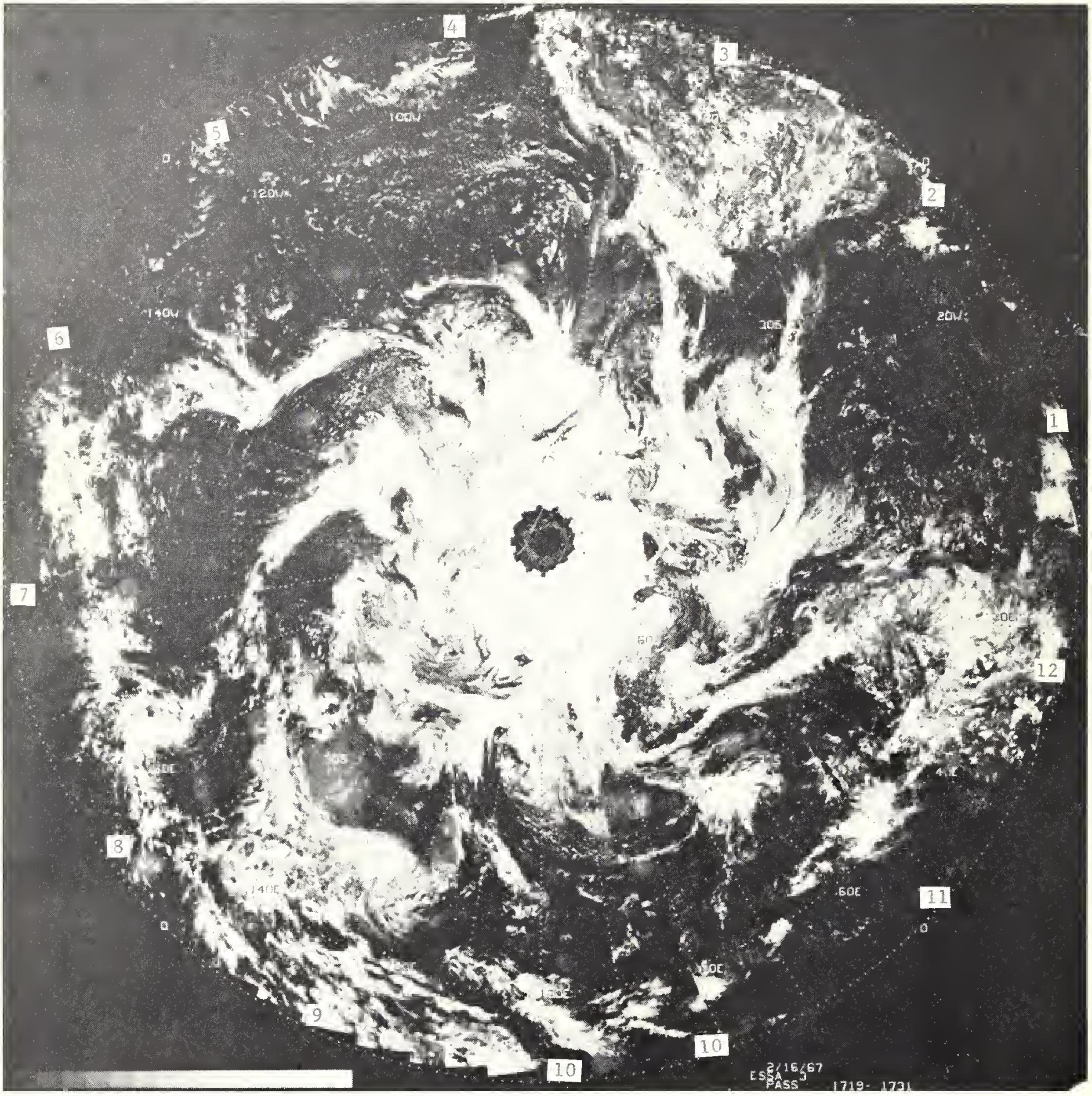
ESSA 3
PASS 1719- 1731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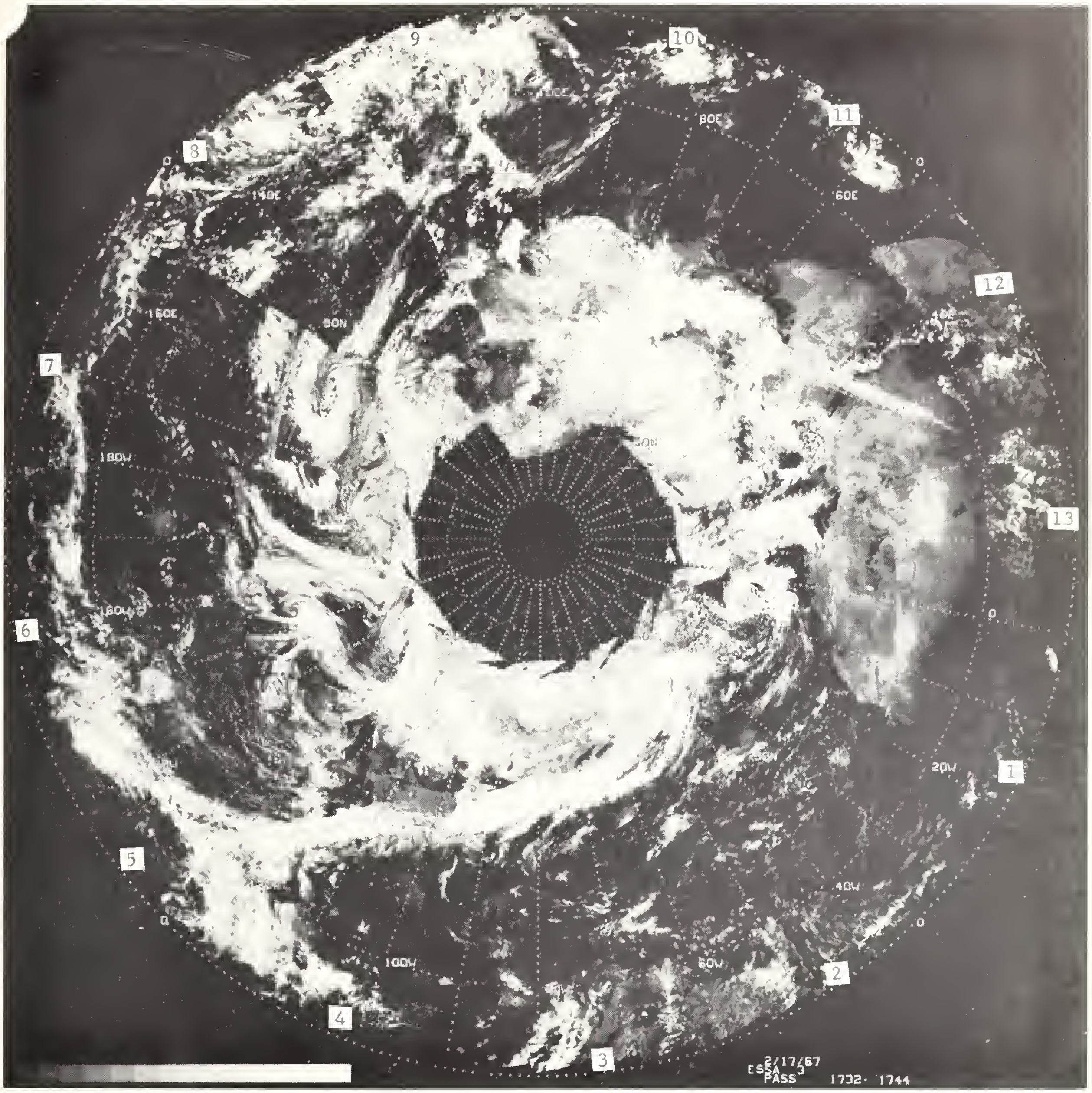
ESSA 3
PASS 1719- 1731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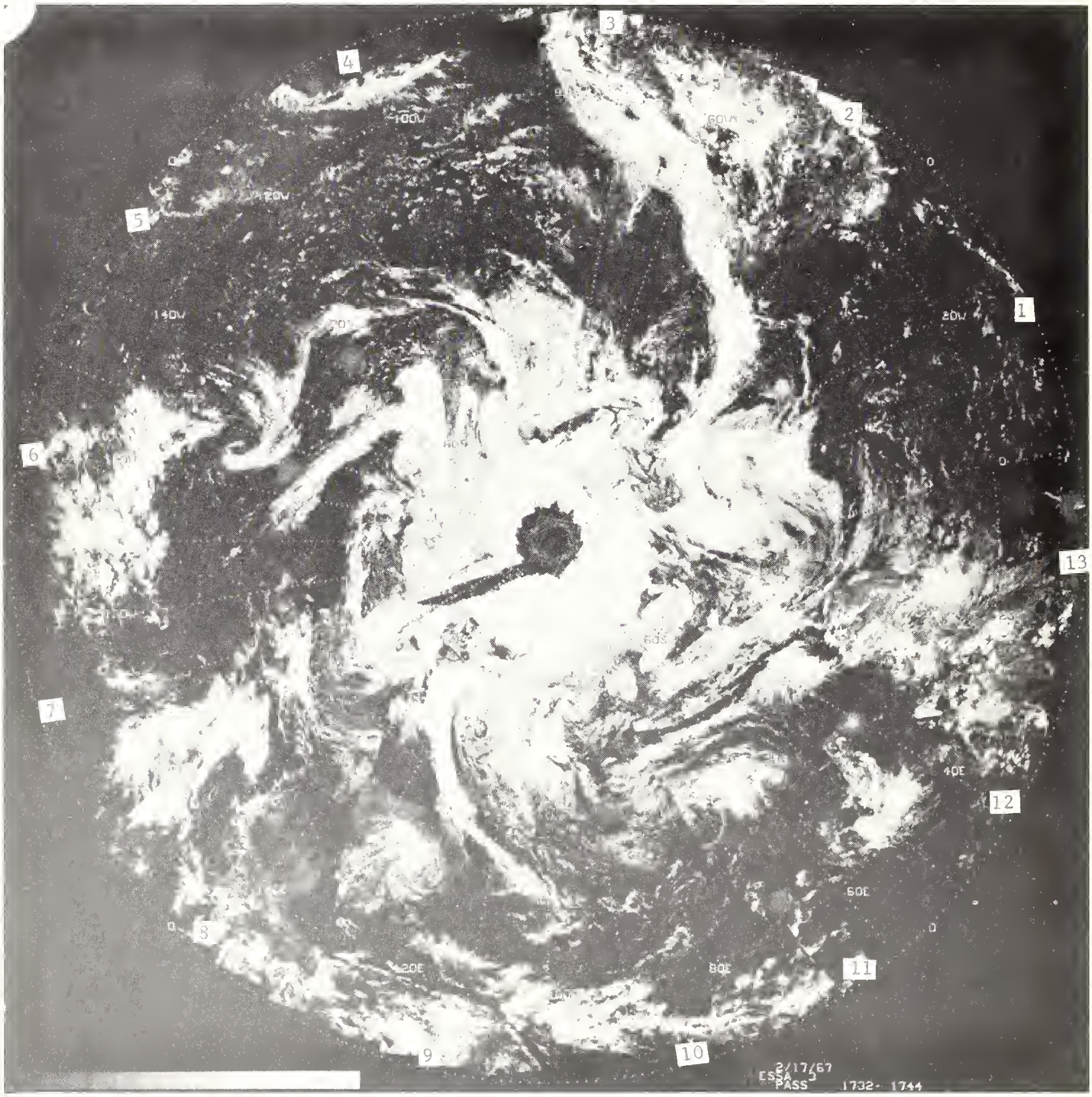
ESSA 3
PASS 1732- 1744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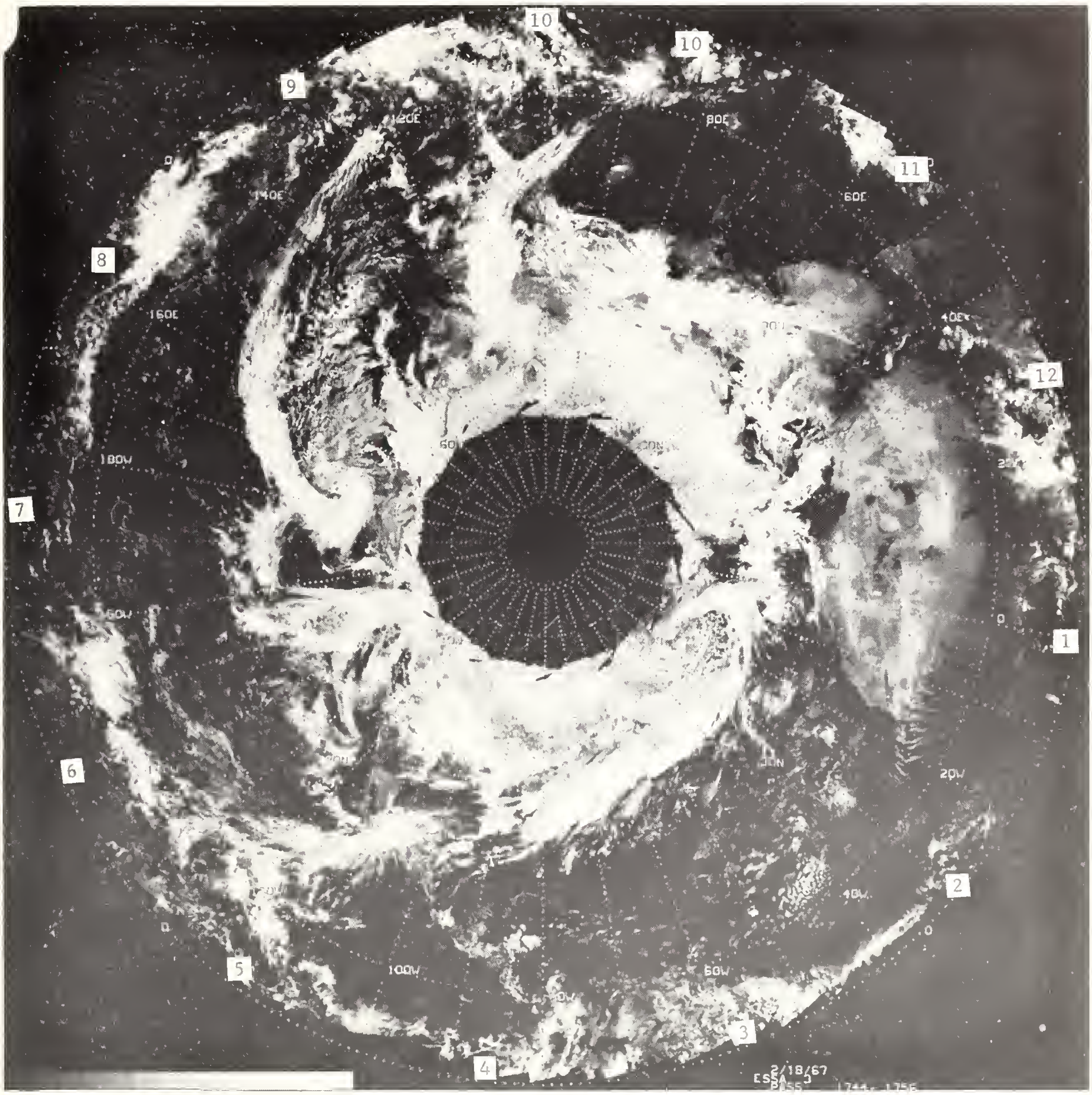
ESSA 3
PASS 1732- 1744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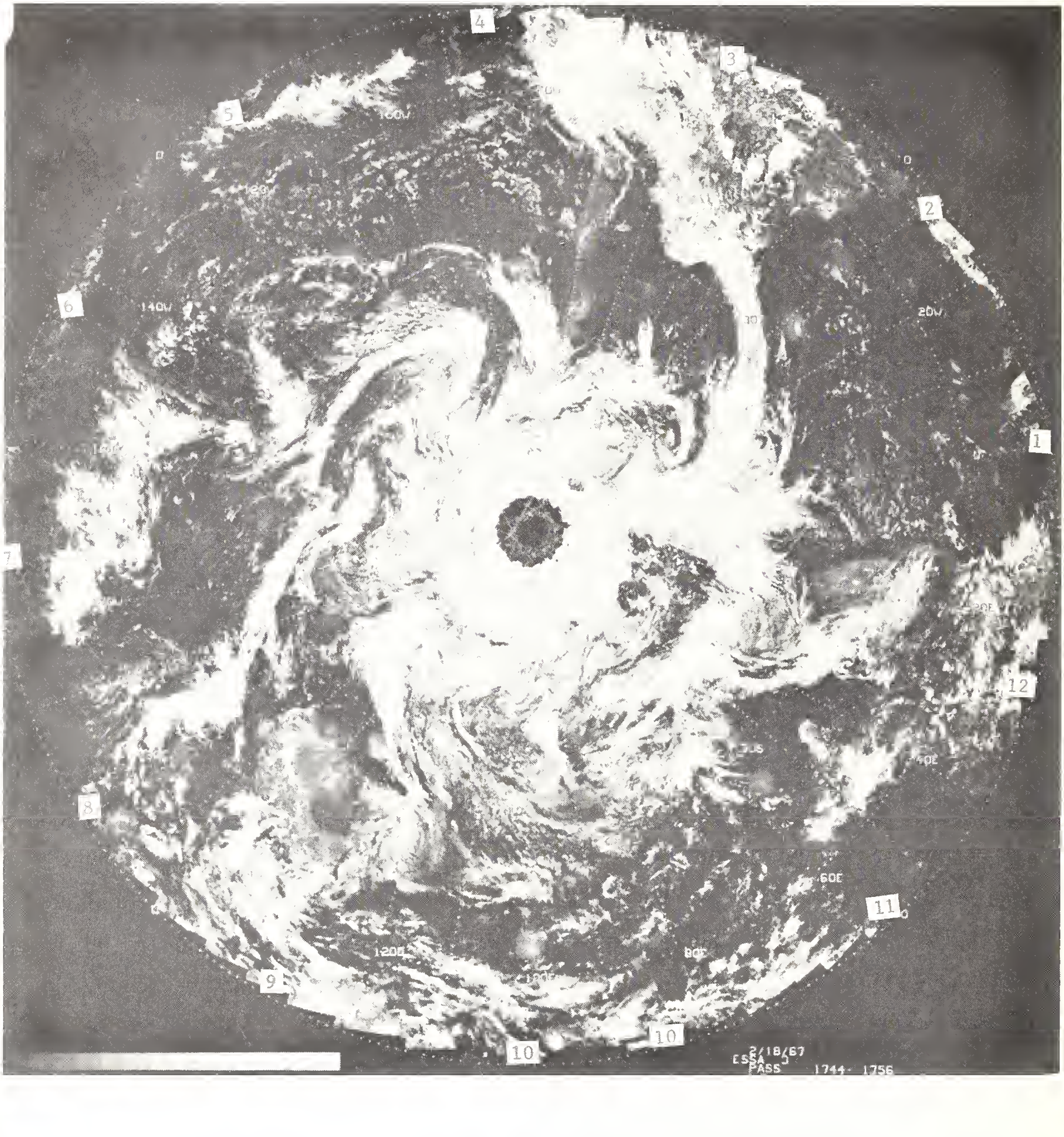
2/18/67
ESSA 3
PASS 1744- 1756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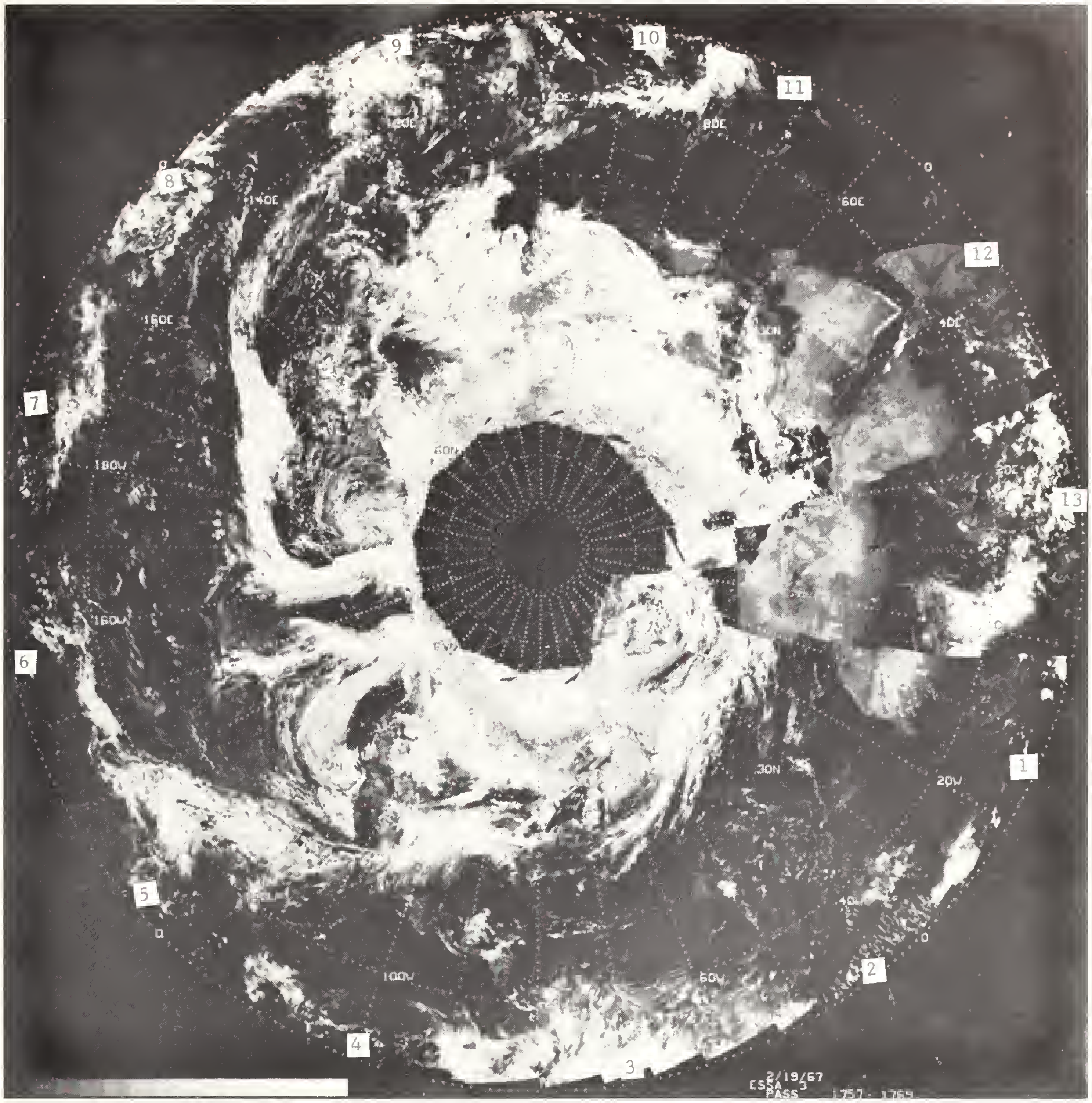
ESSA 3
PASS 1744- 1756



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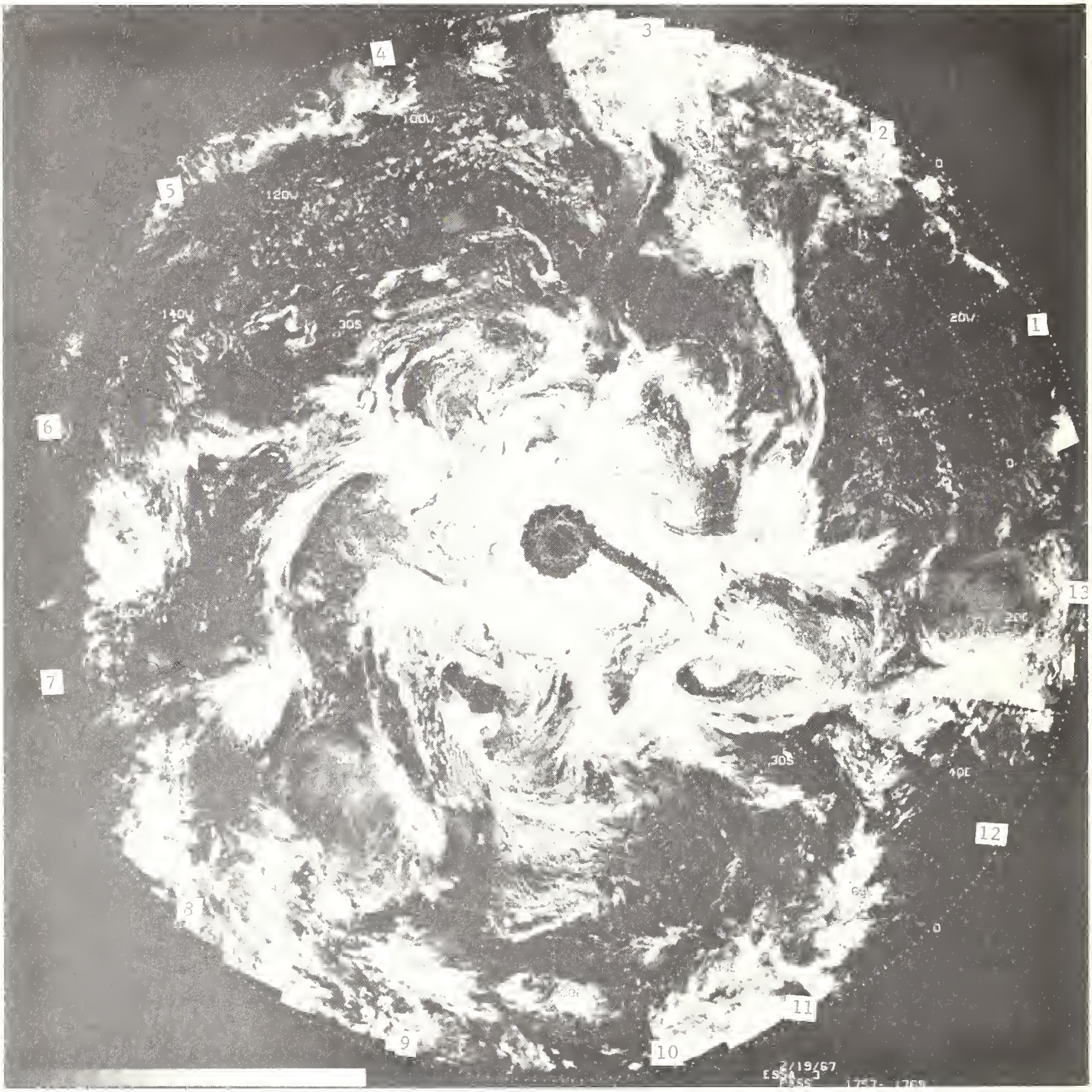
2/19/67
ESSA 3
PASS 1757 - 1769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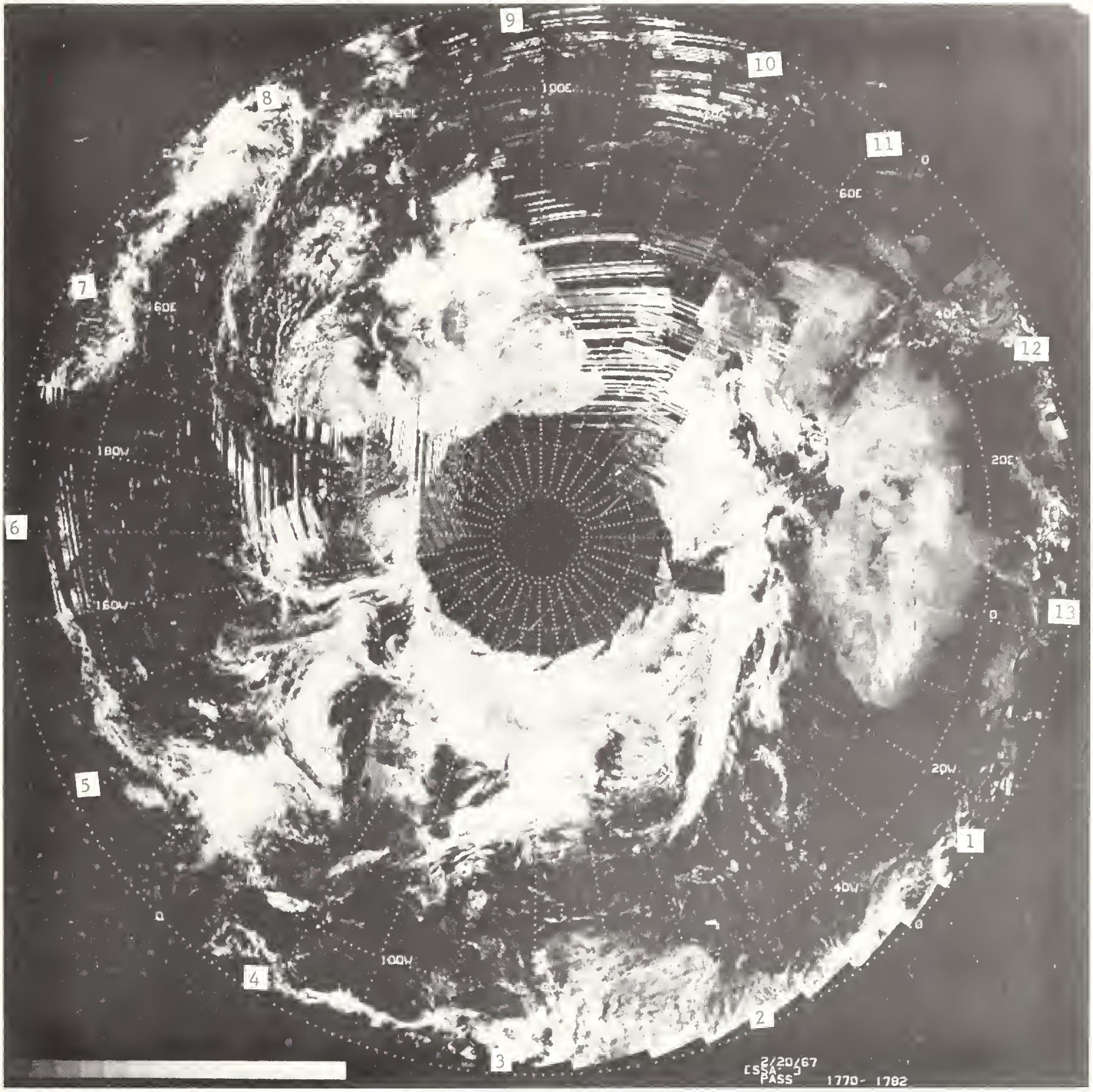
2/19/67
ESSA 3
PASS 1757- 1769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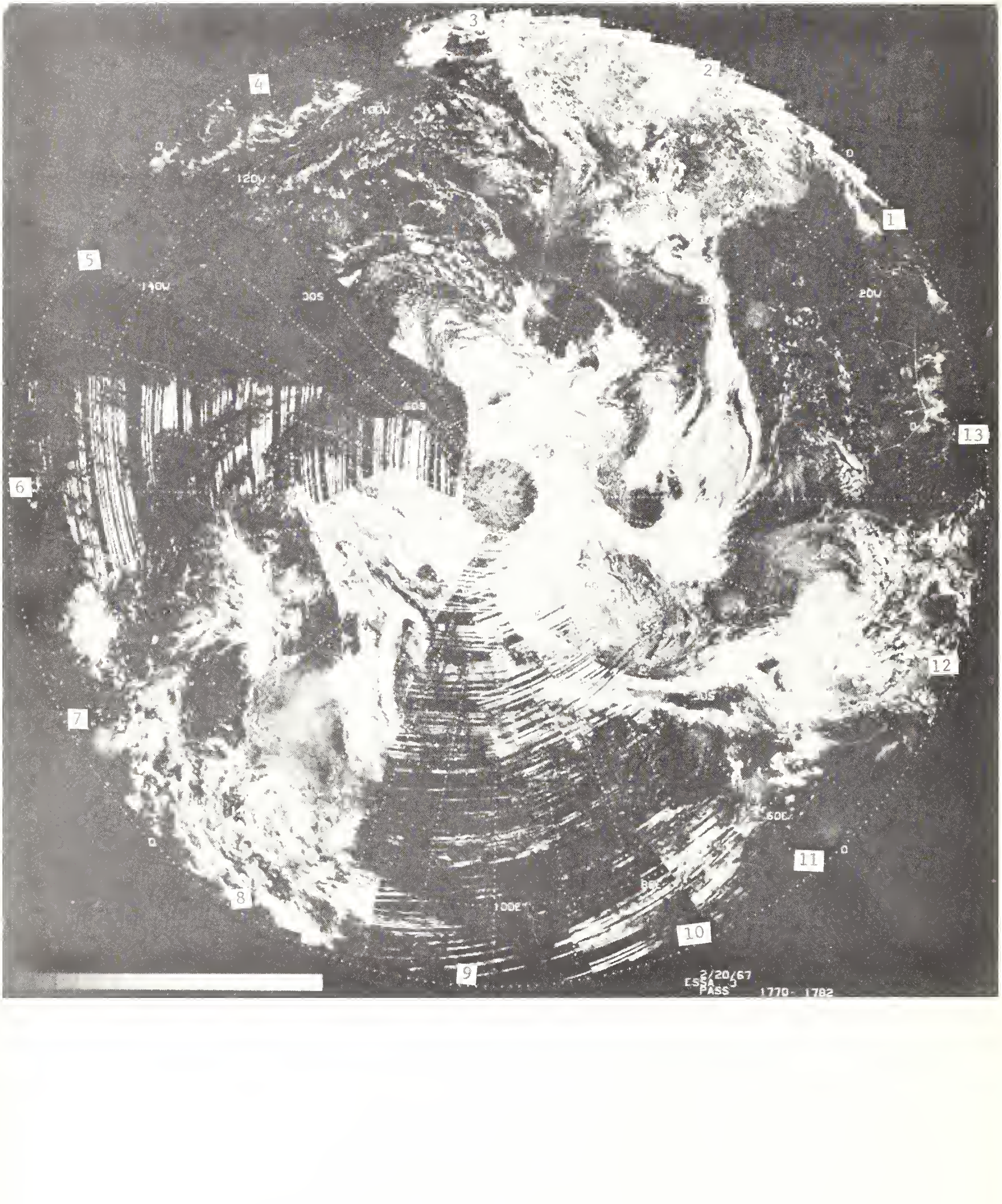
ESSA-3
PASS 1770- 1782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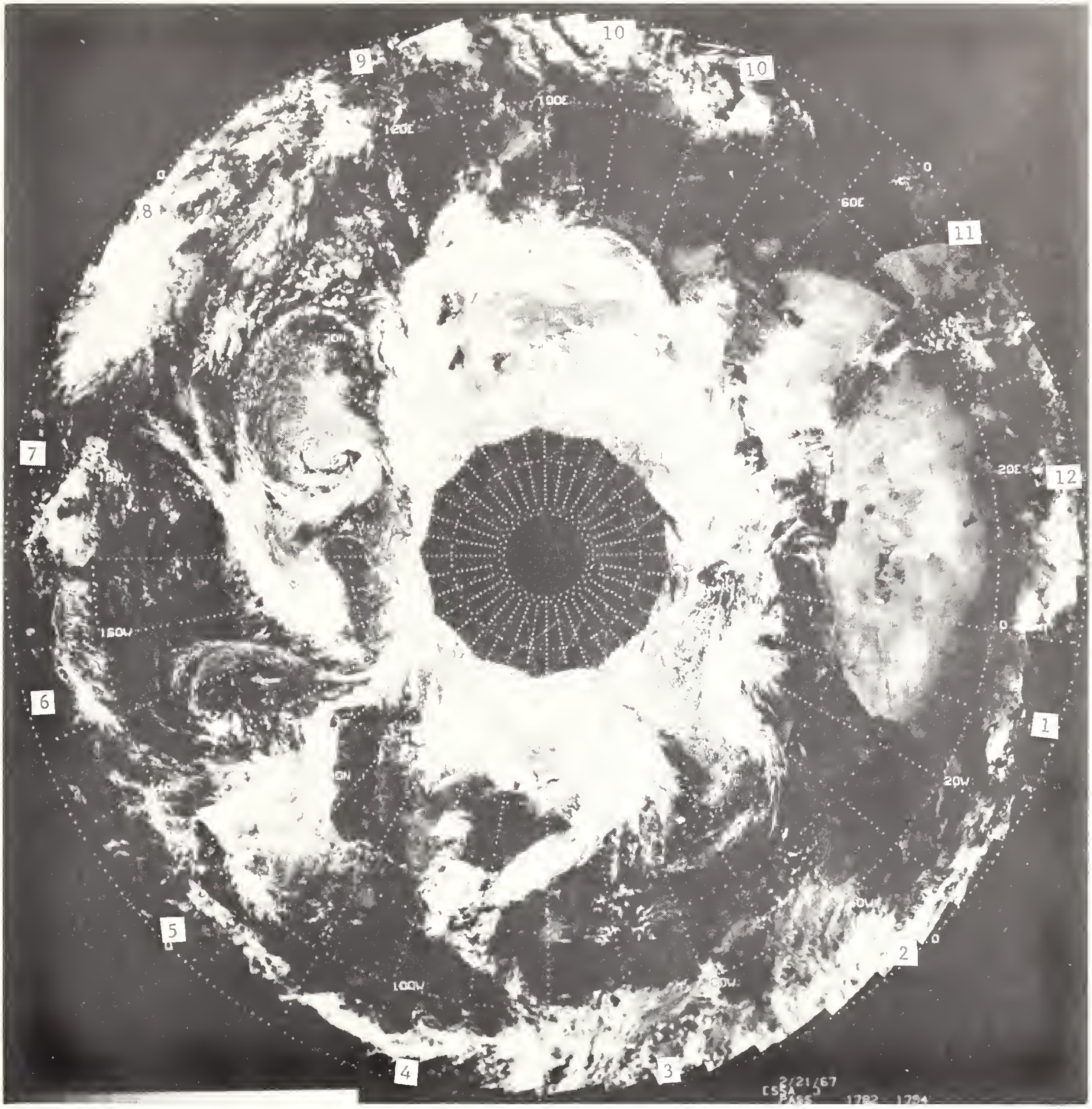
2/20/67
ESSA 3
PASS 1770- 1782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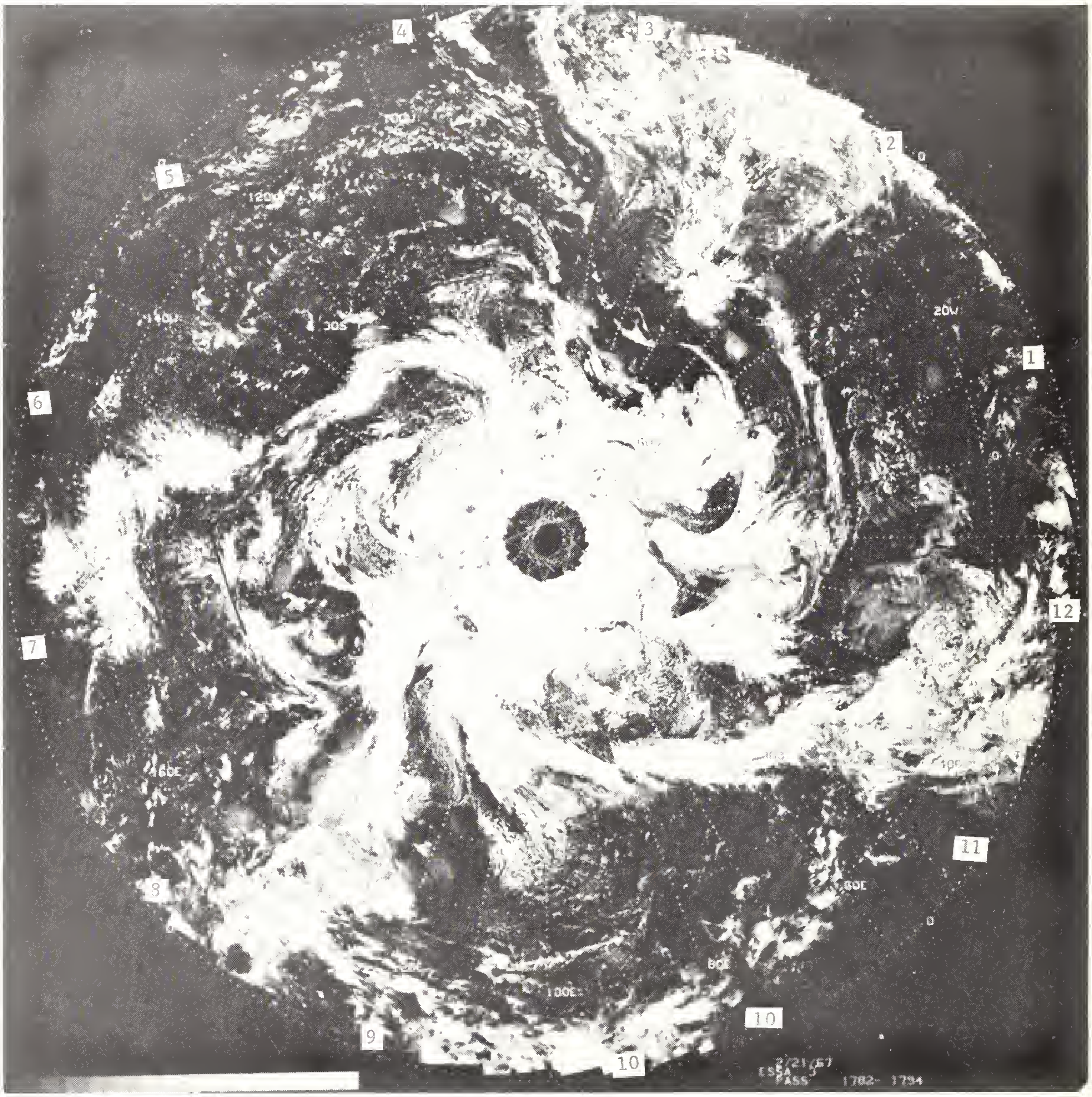
2/21/67
ESSA 5
PASS 1782 1794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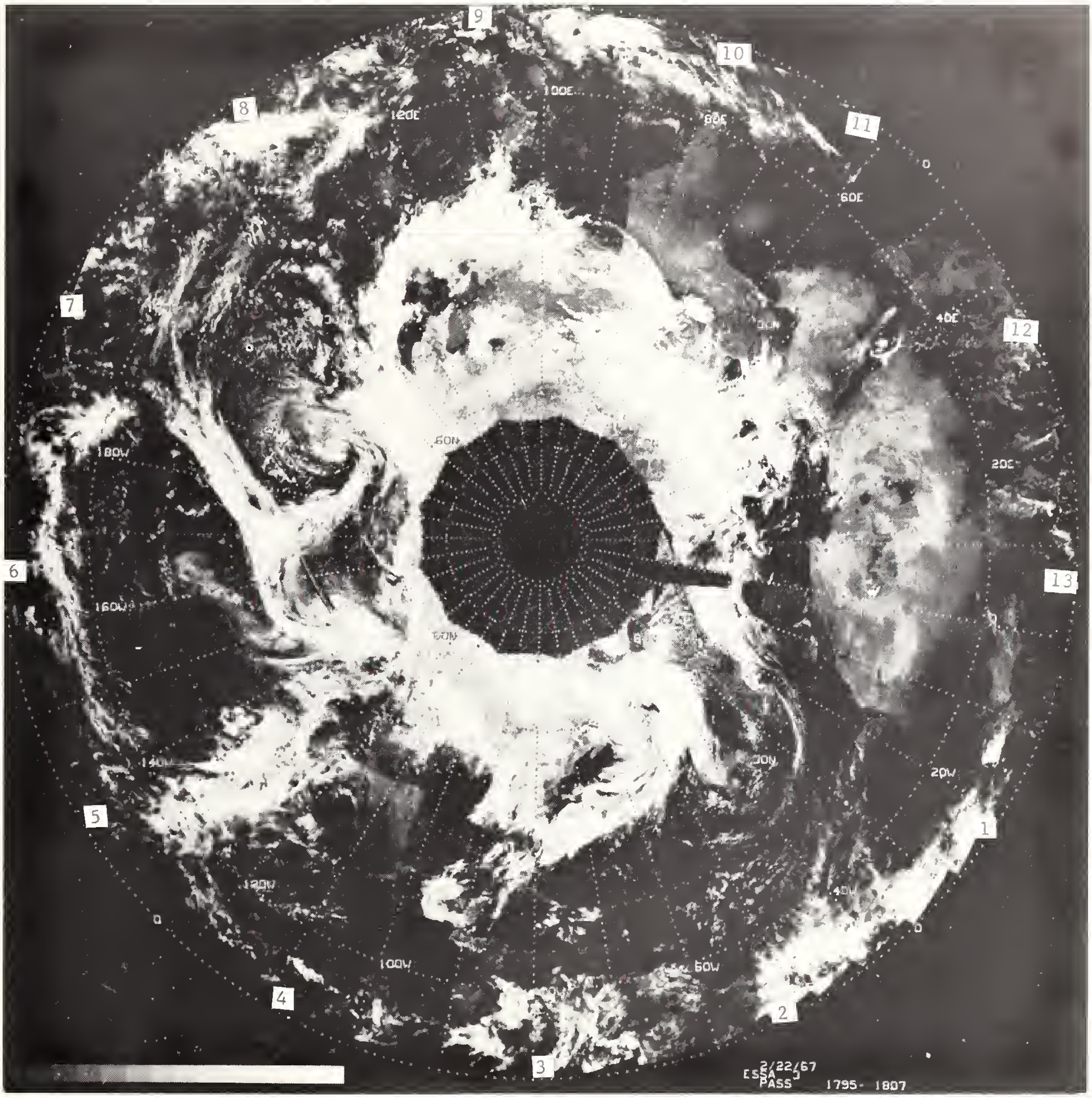
2/21/67
ESSA 3
PASS 1782- 1794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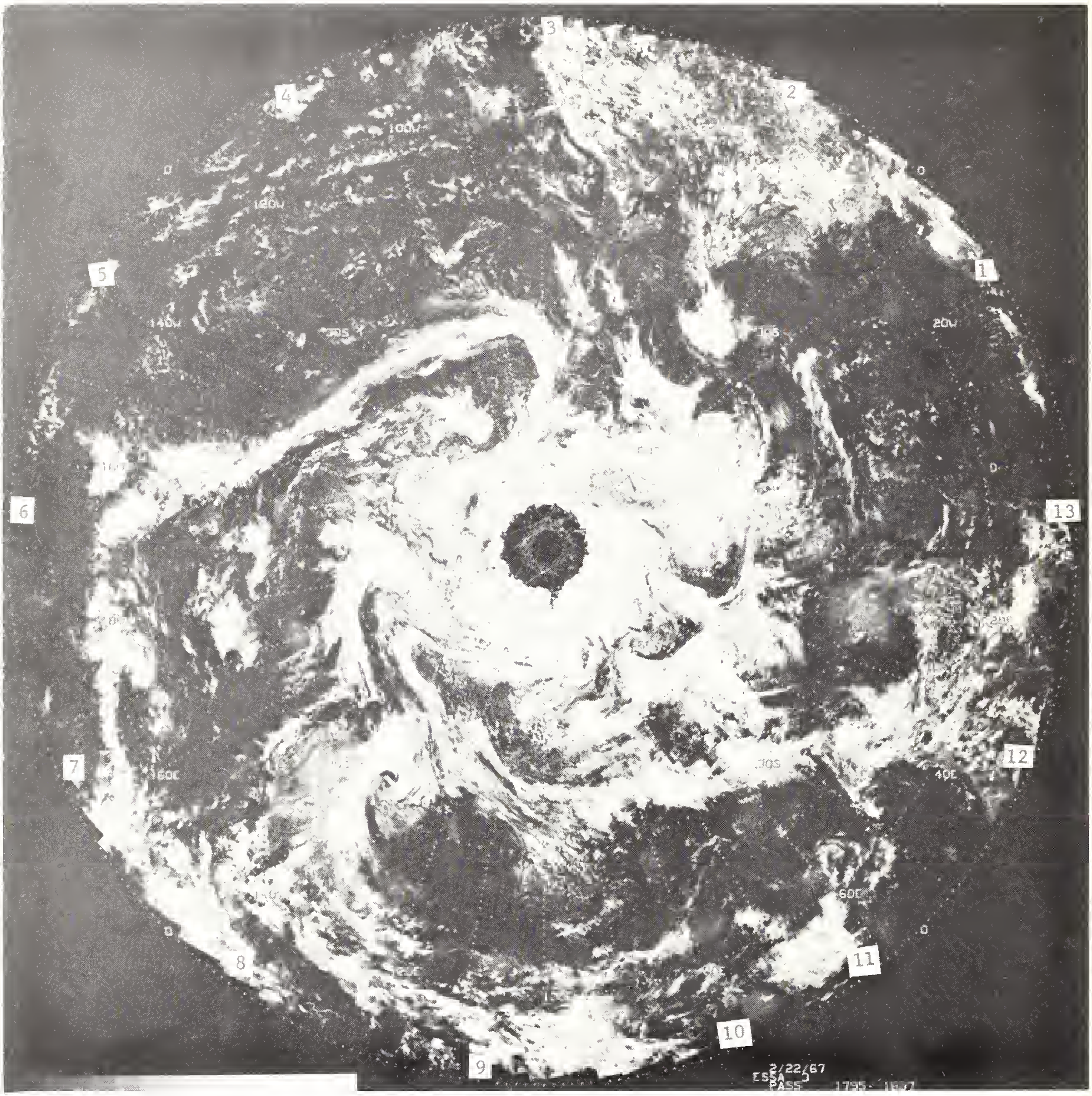
ESSA 3
PASS 1795- 1807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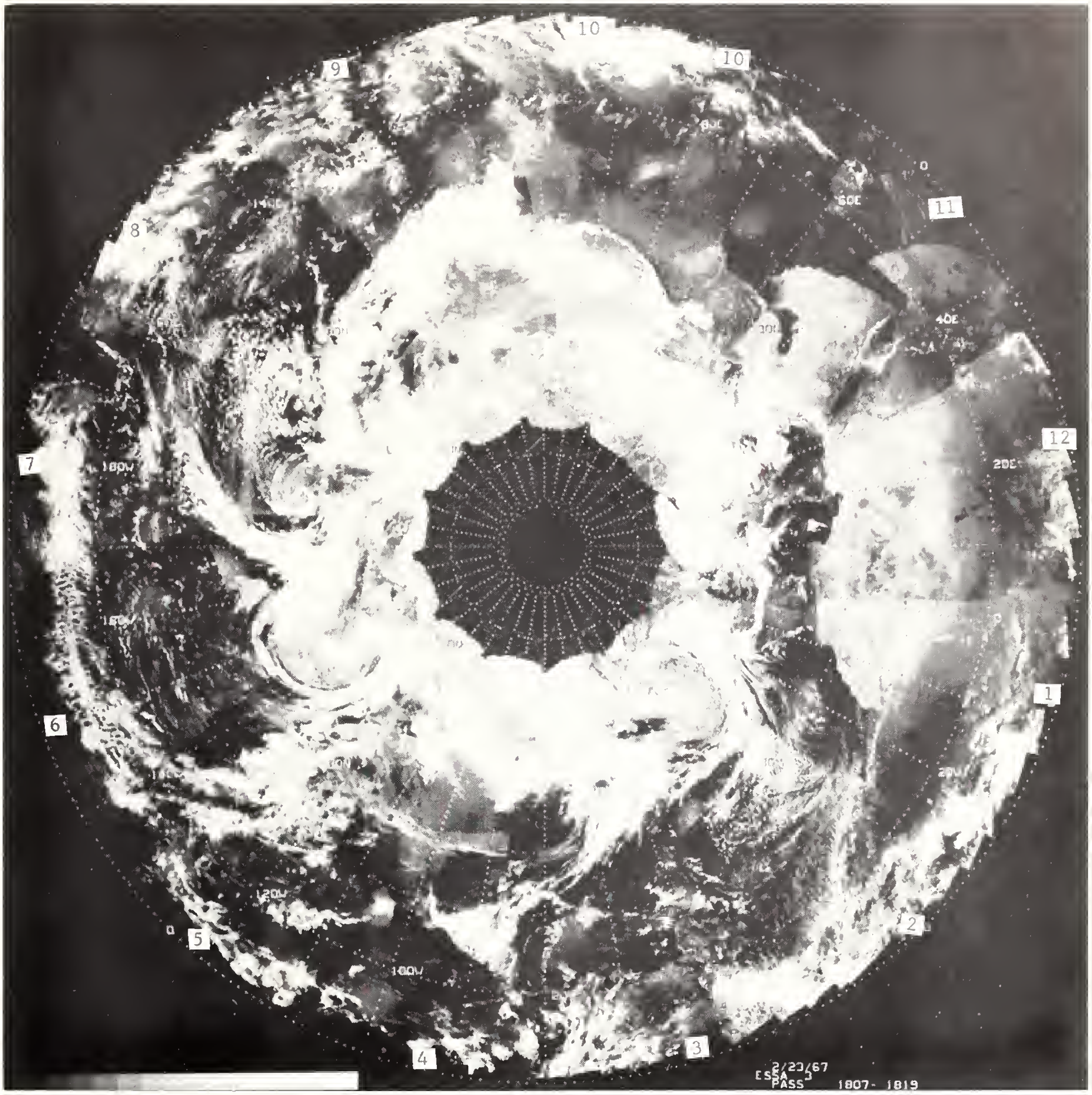
2/22/67
ESSA 3
PASS 1795-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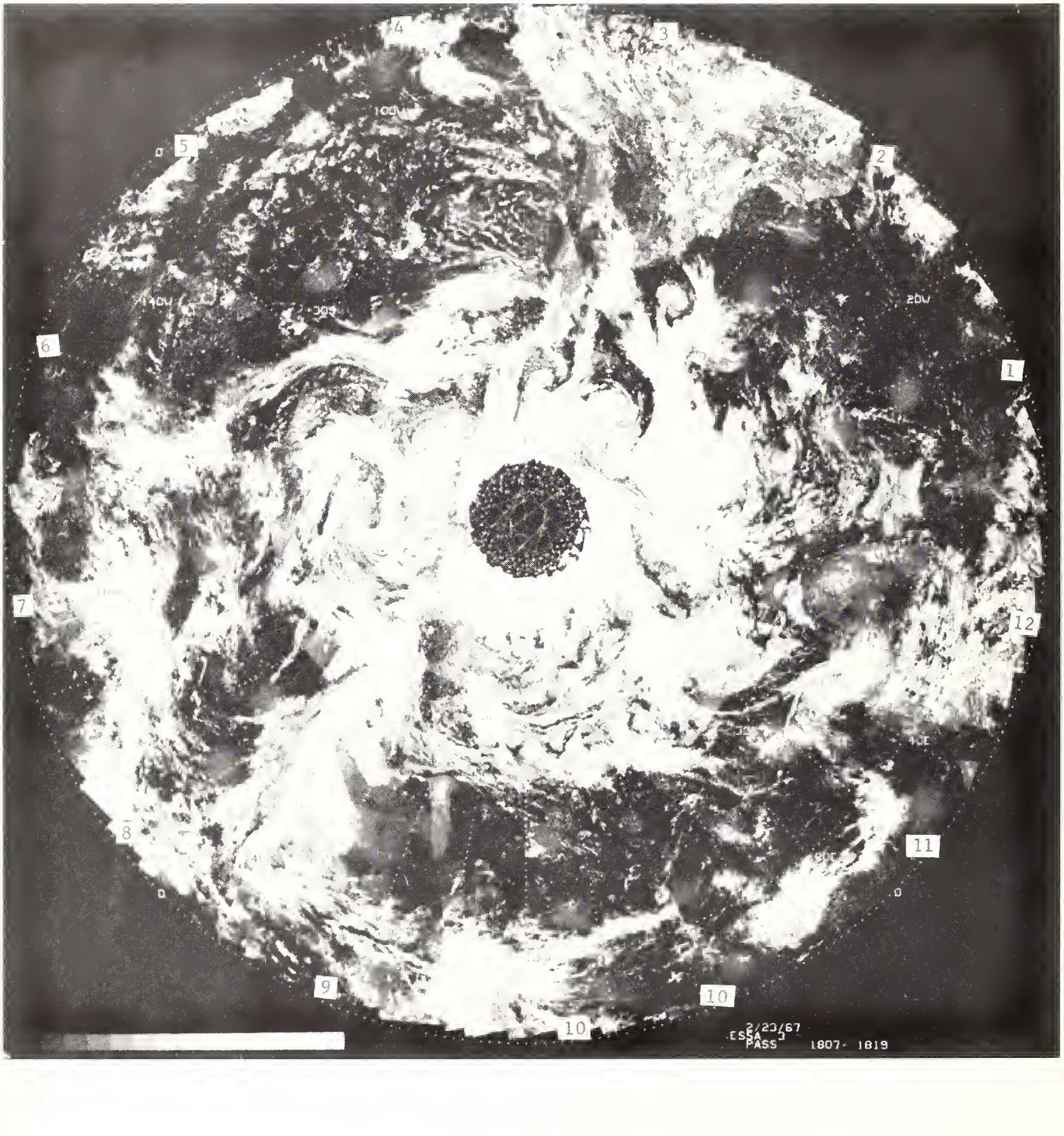
ESSA 3
PASS 1807- 1819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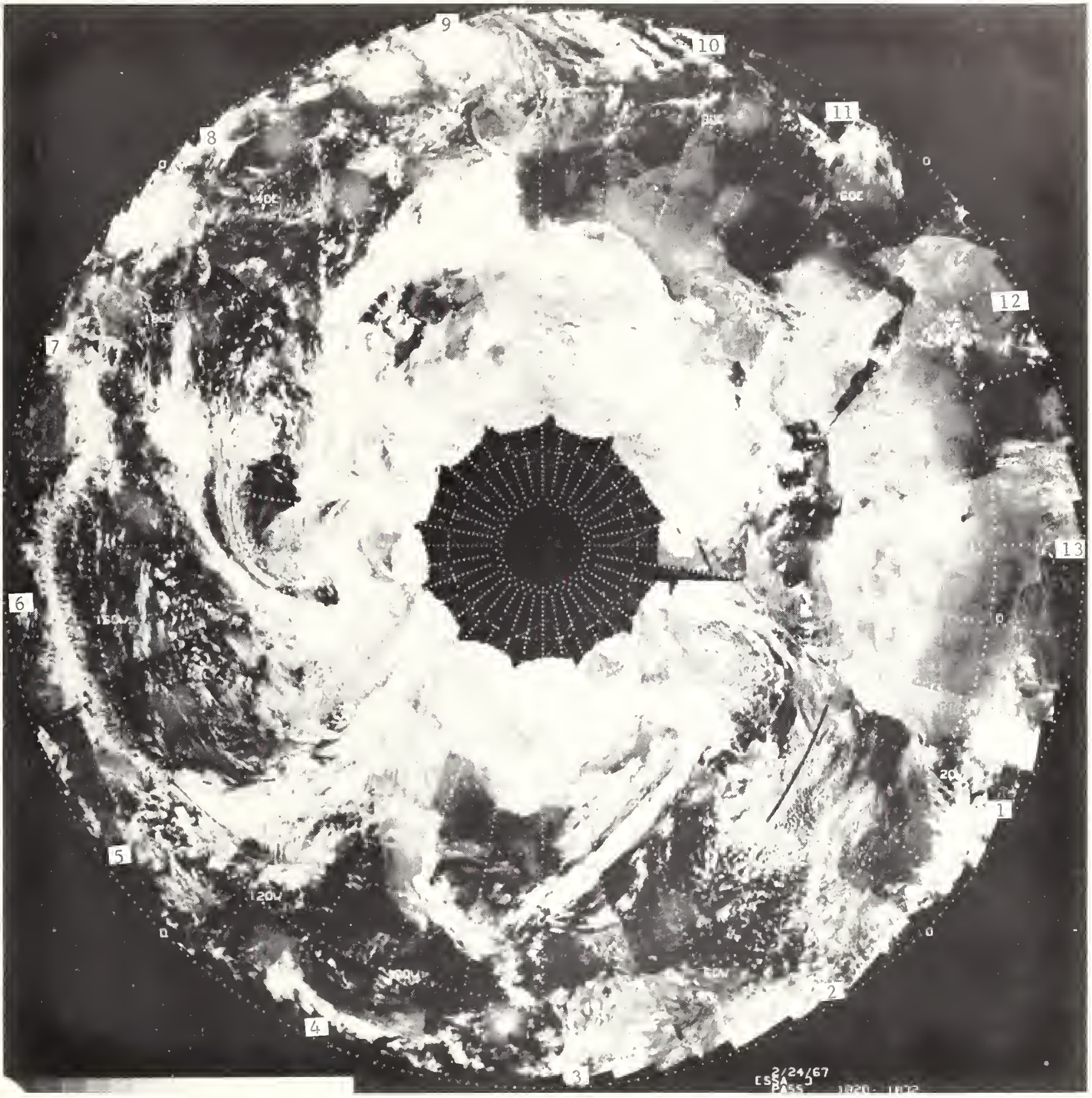
ESSA 3
PASS 1807- 1819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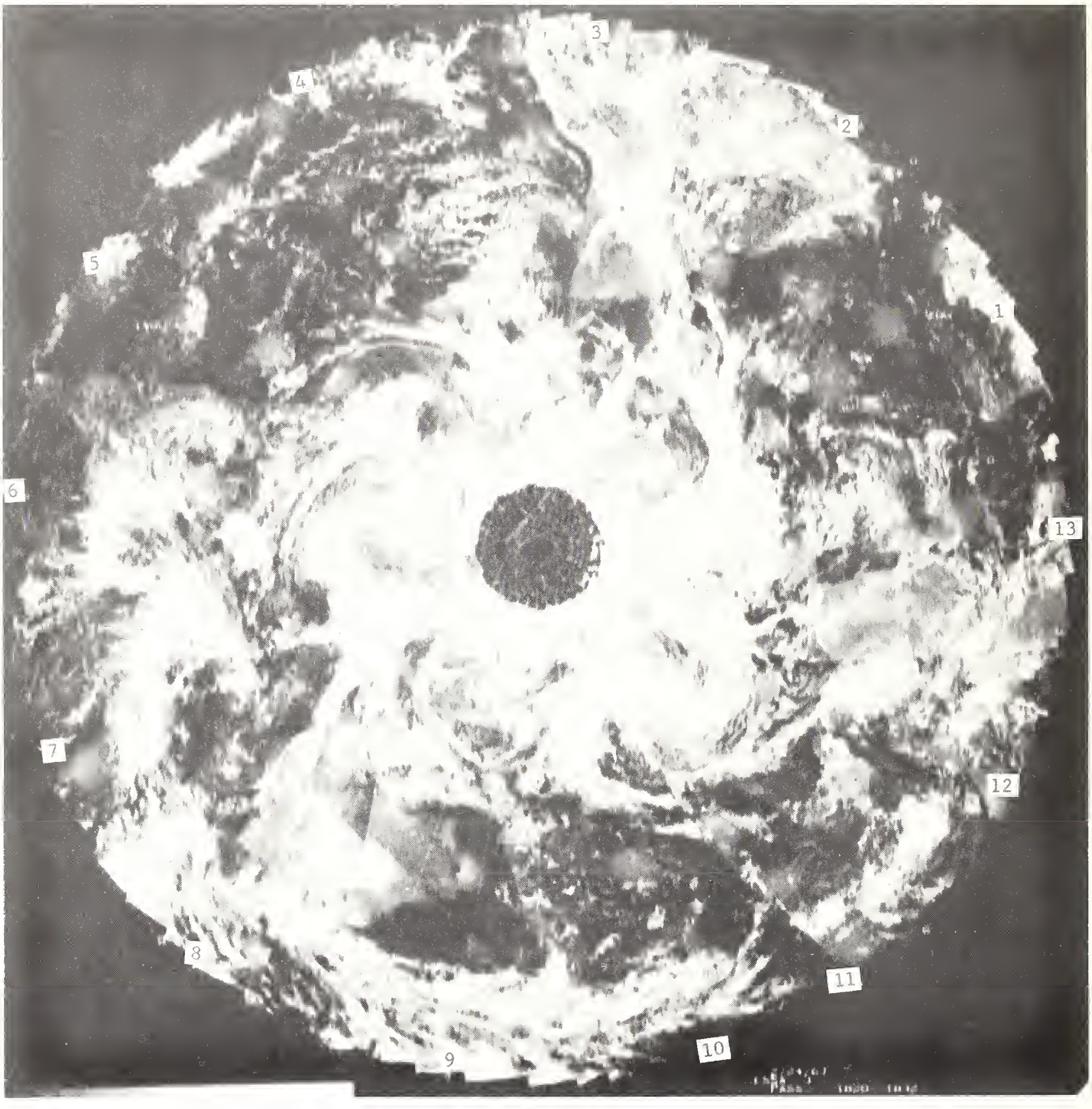
ESSA
PASS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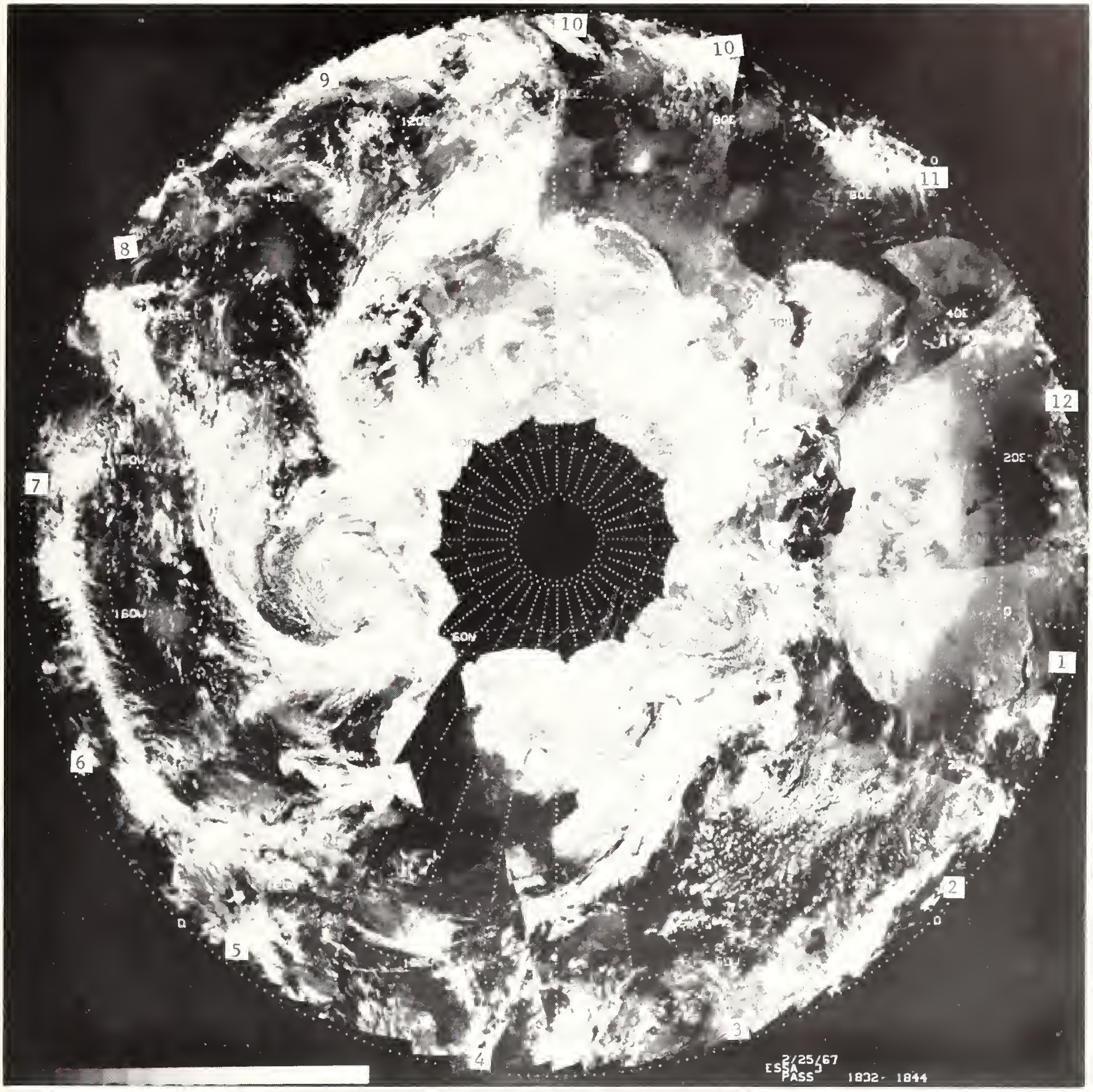
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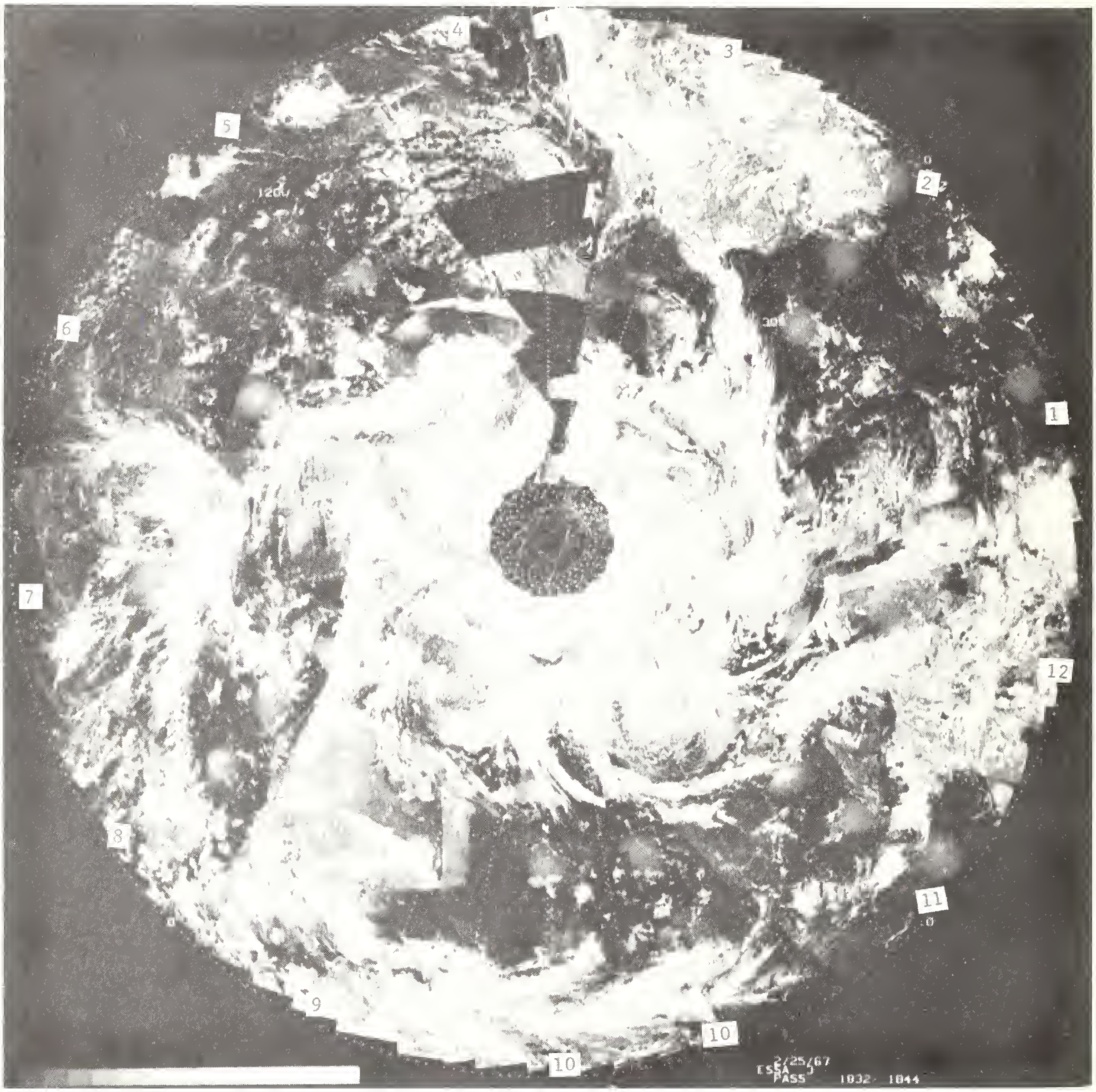
ESSA 3
PASS 1832- 1844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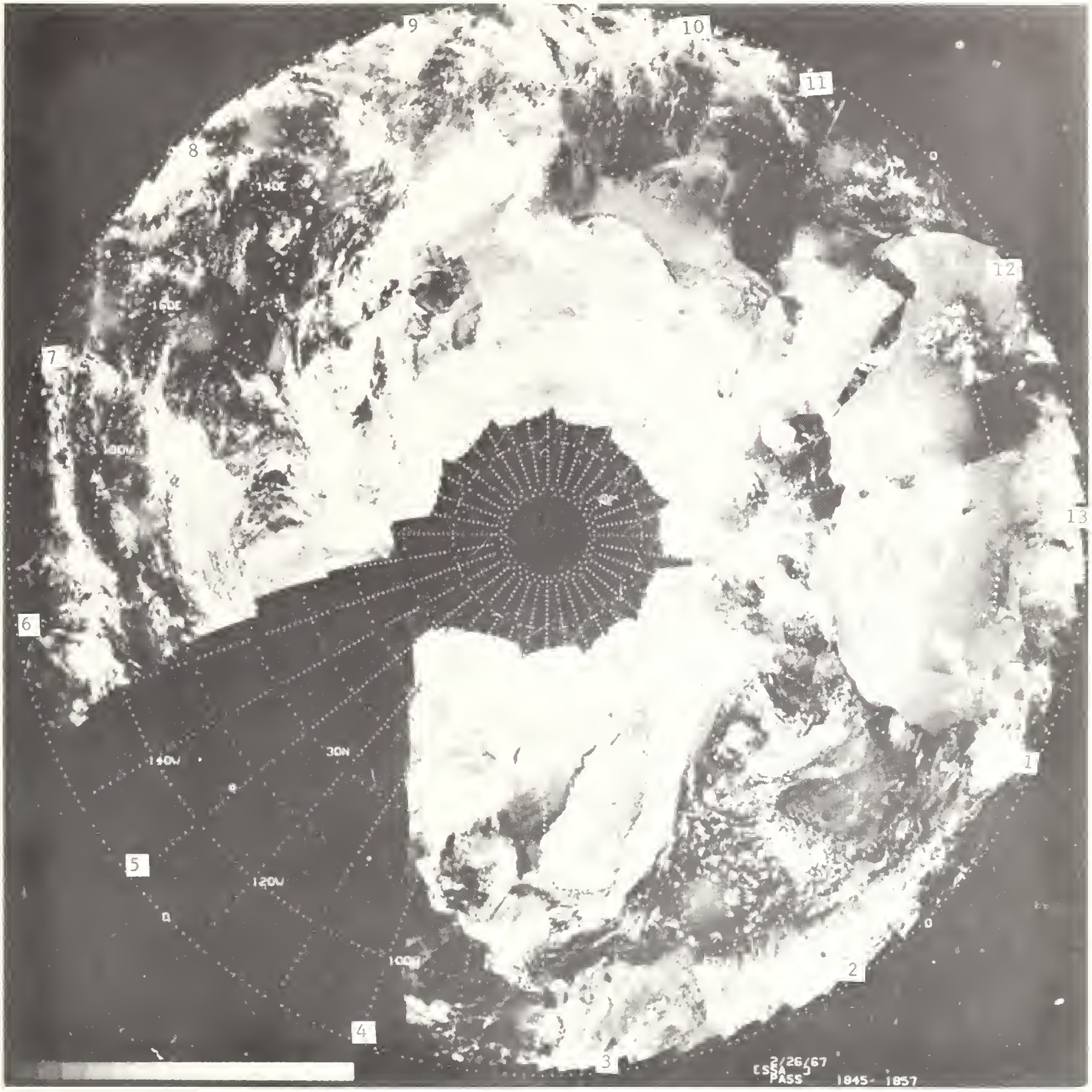
2/25/67
ESSA 3
PASS 1032- 1044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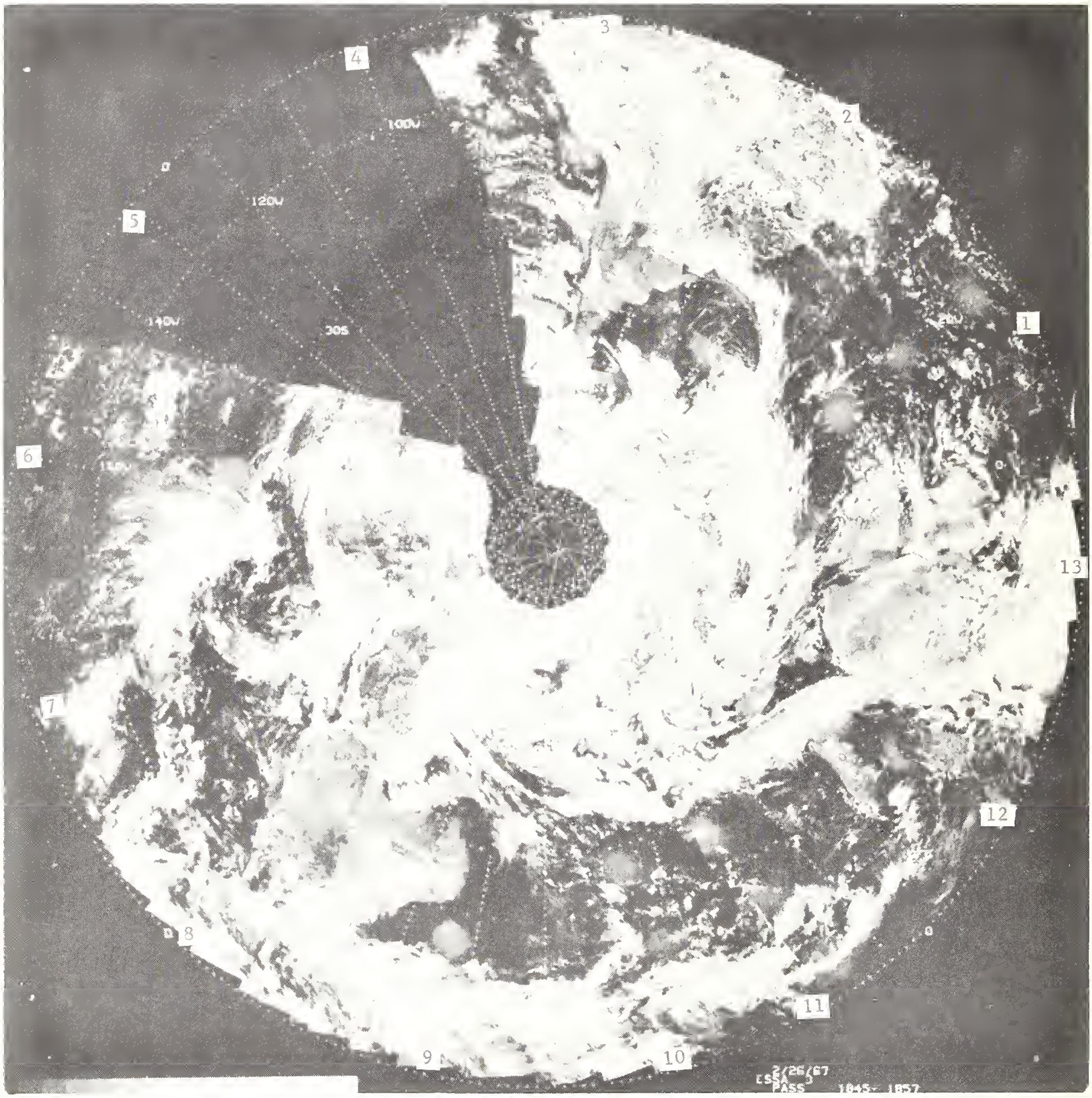
ESSA 5
PASS 1845- 1857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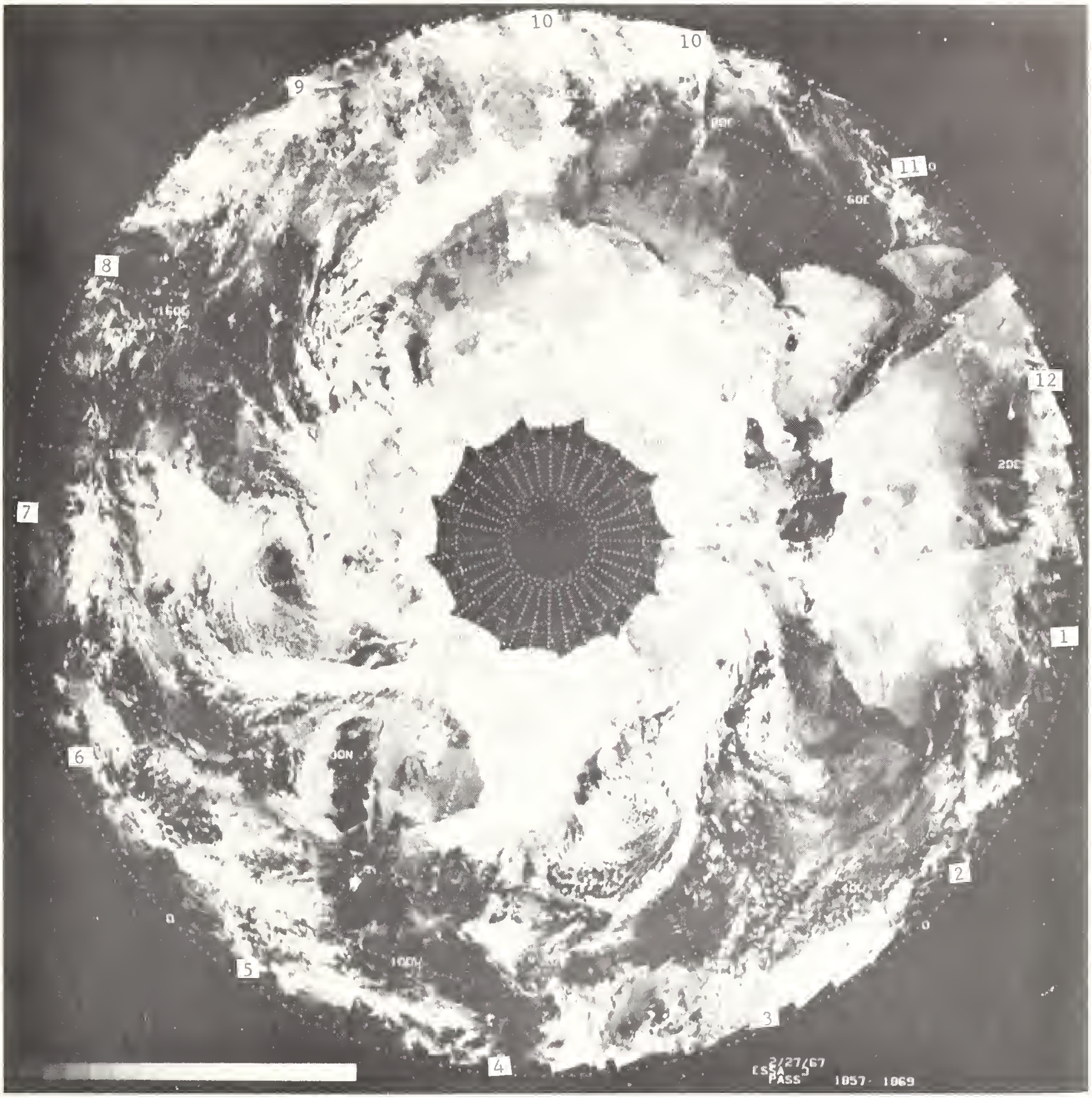
2/26/67
ESSA 3
PASS 1845- 1857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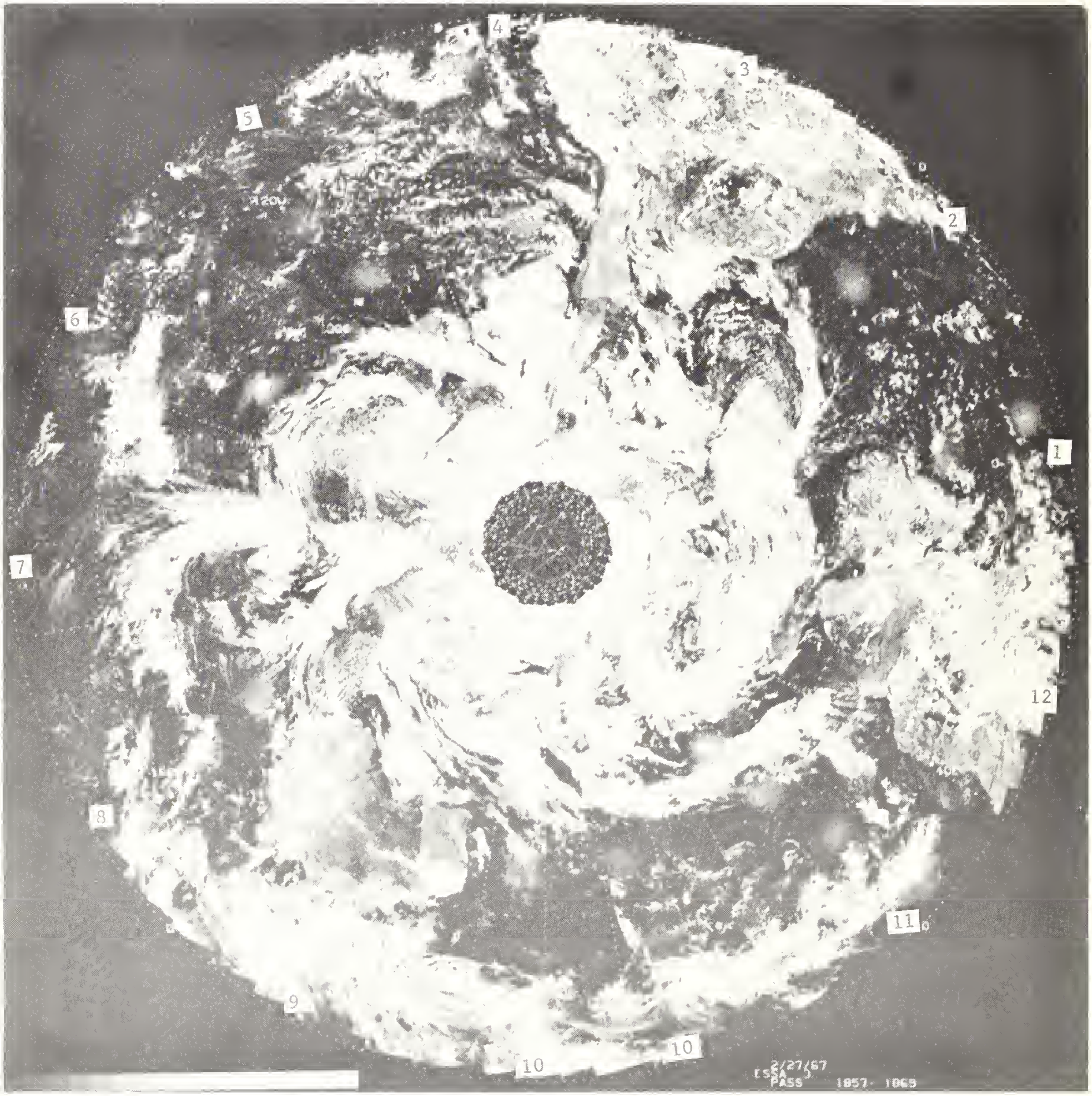
ESSA 5
PASS 1057 · 1069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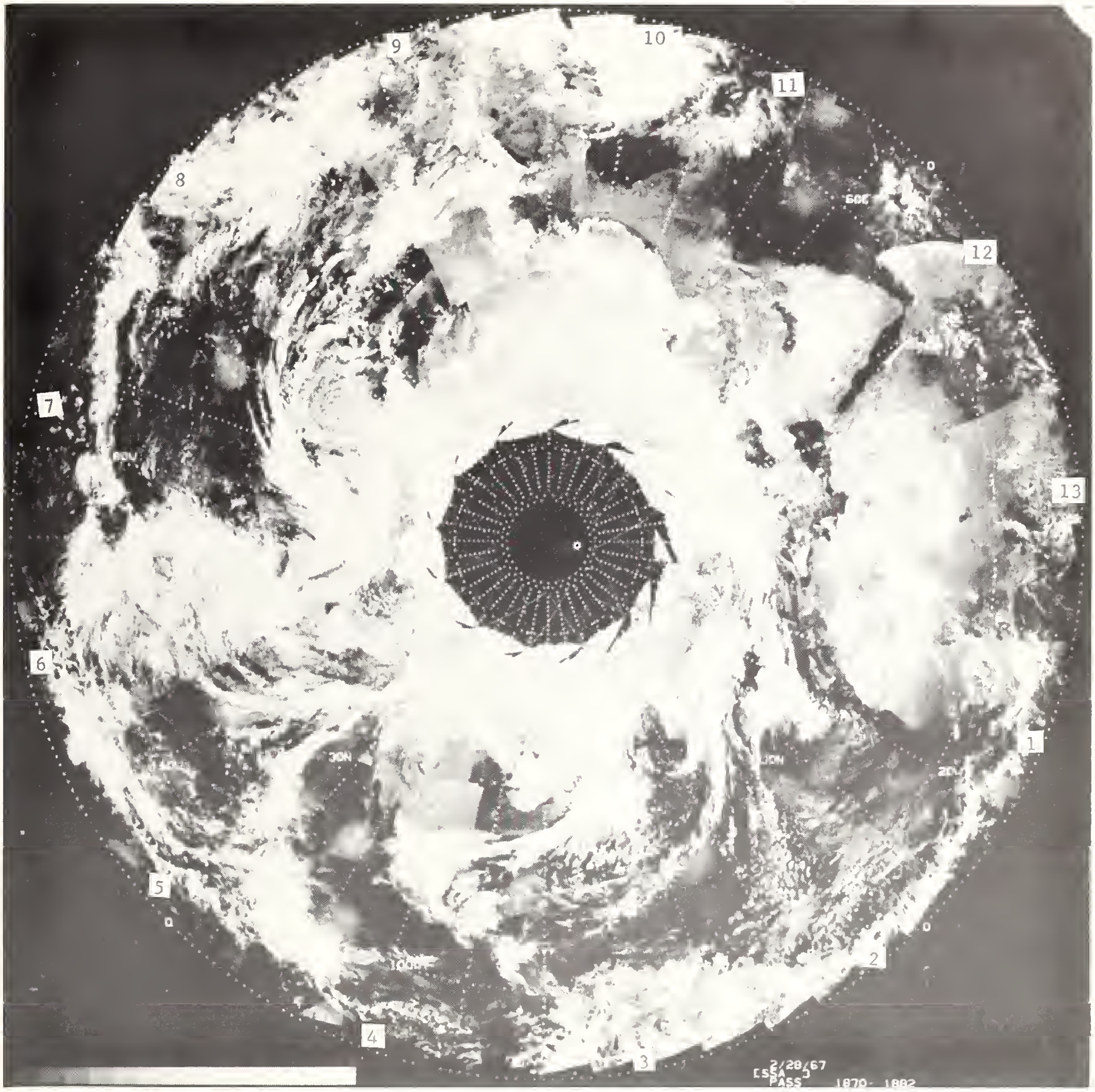
ESSA 3
PASS 1857- 1869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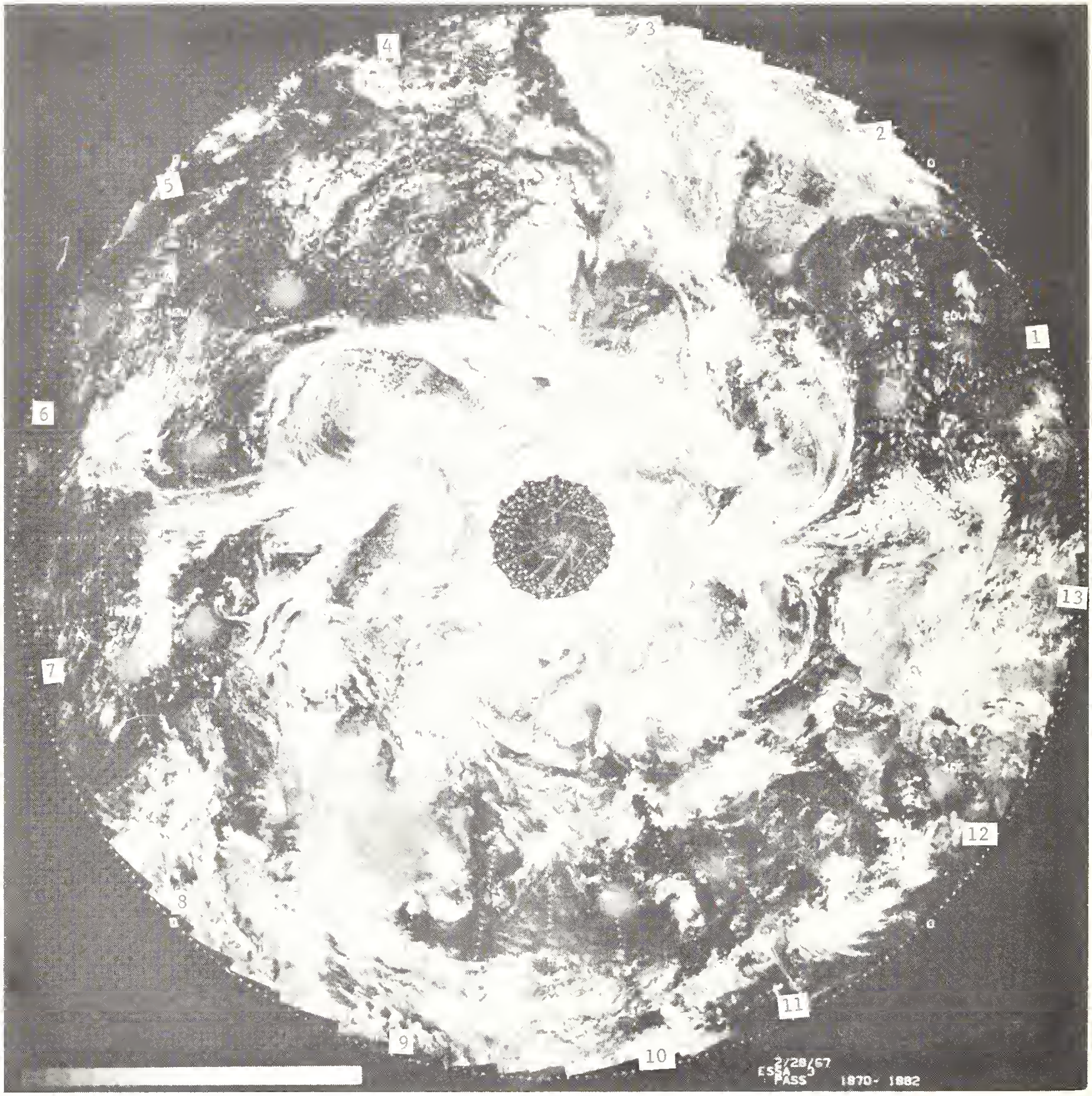
ESSA 3
PASS 1870- 1882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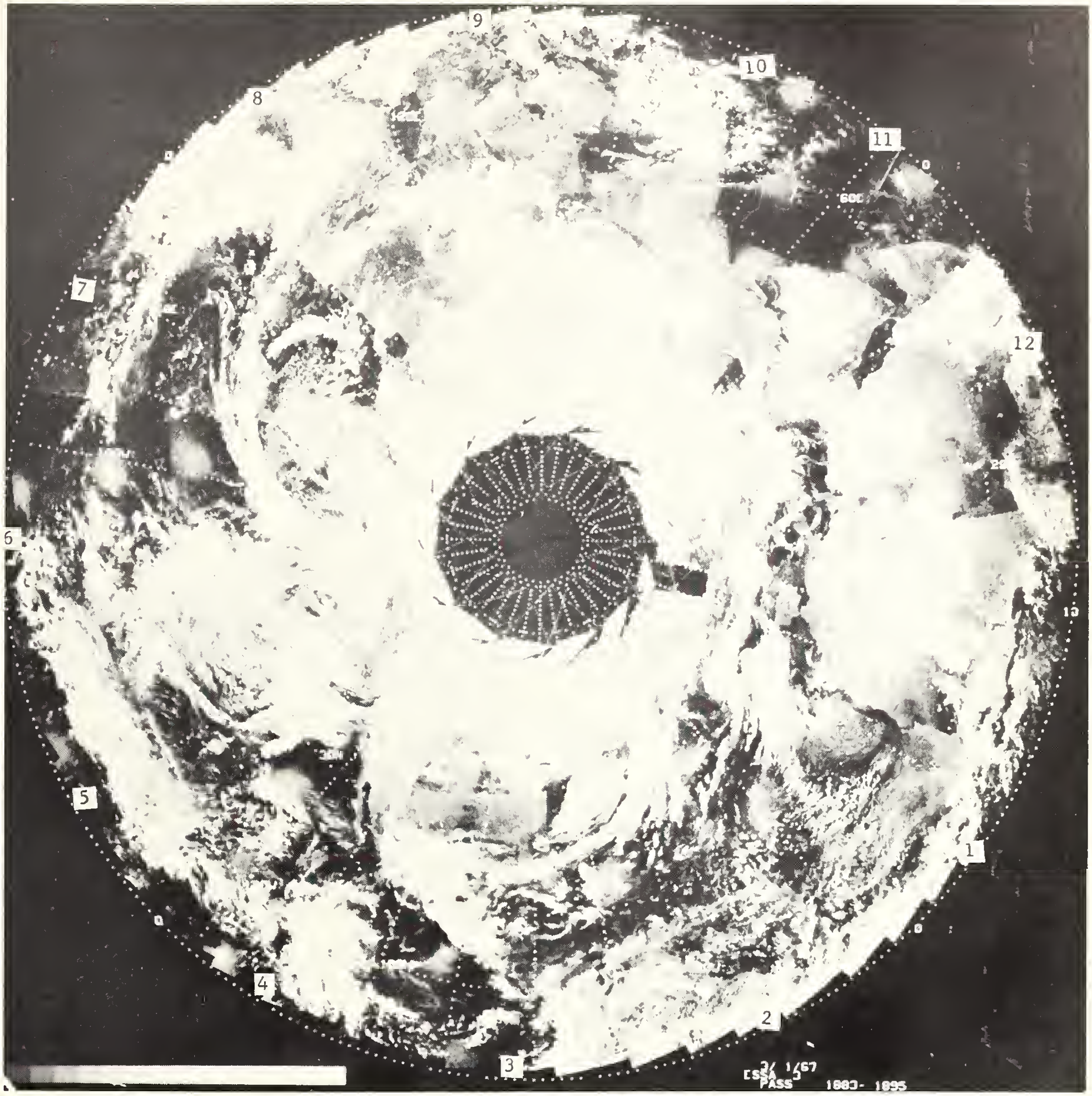
ESSA 3
PASS 1870- 1882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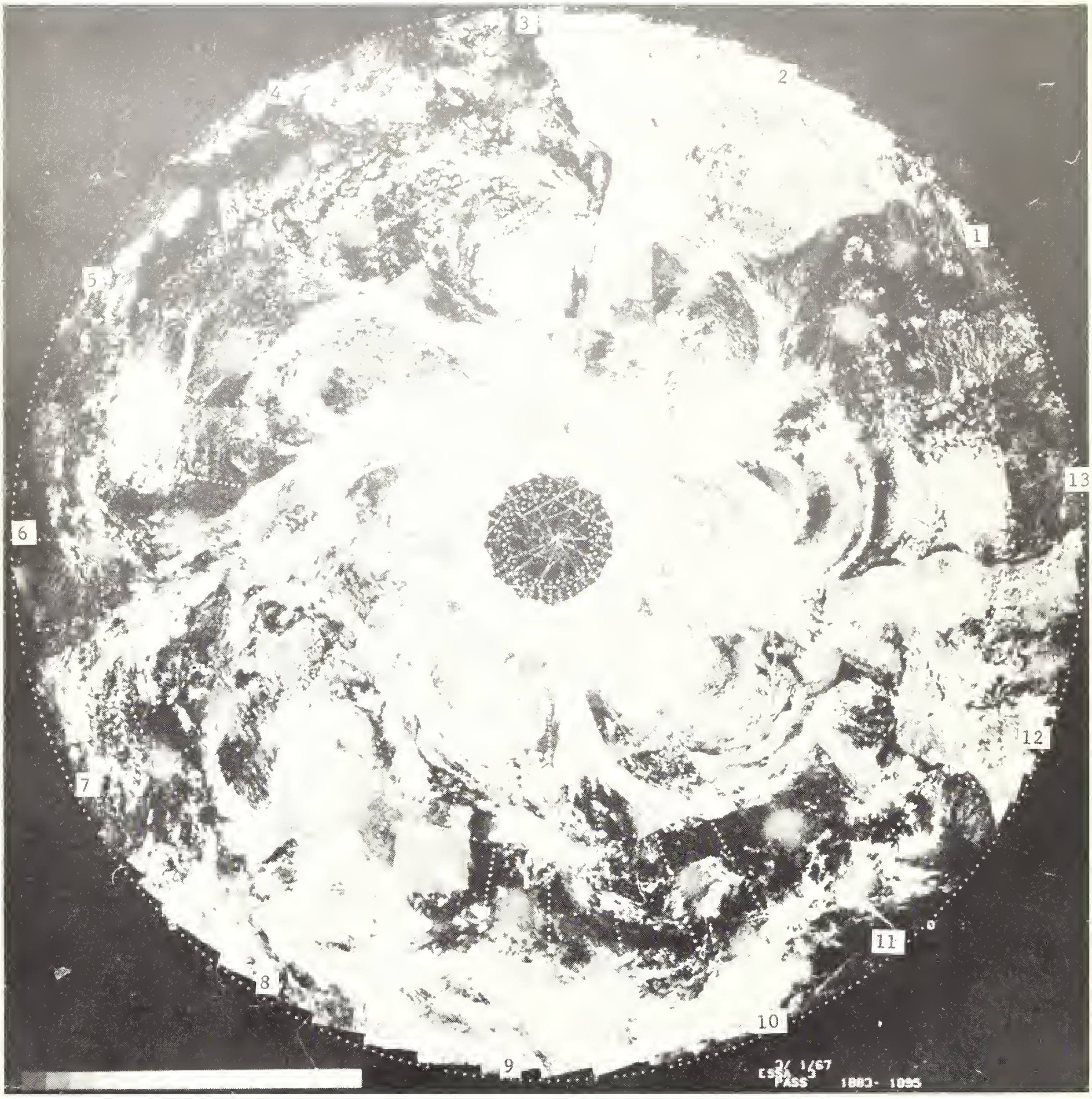
ESSA 3
PASS 1883- 1895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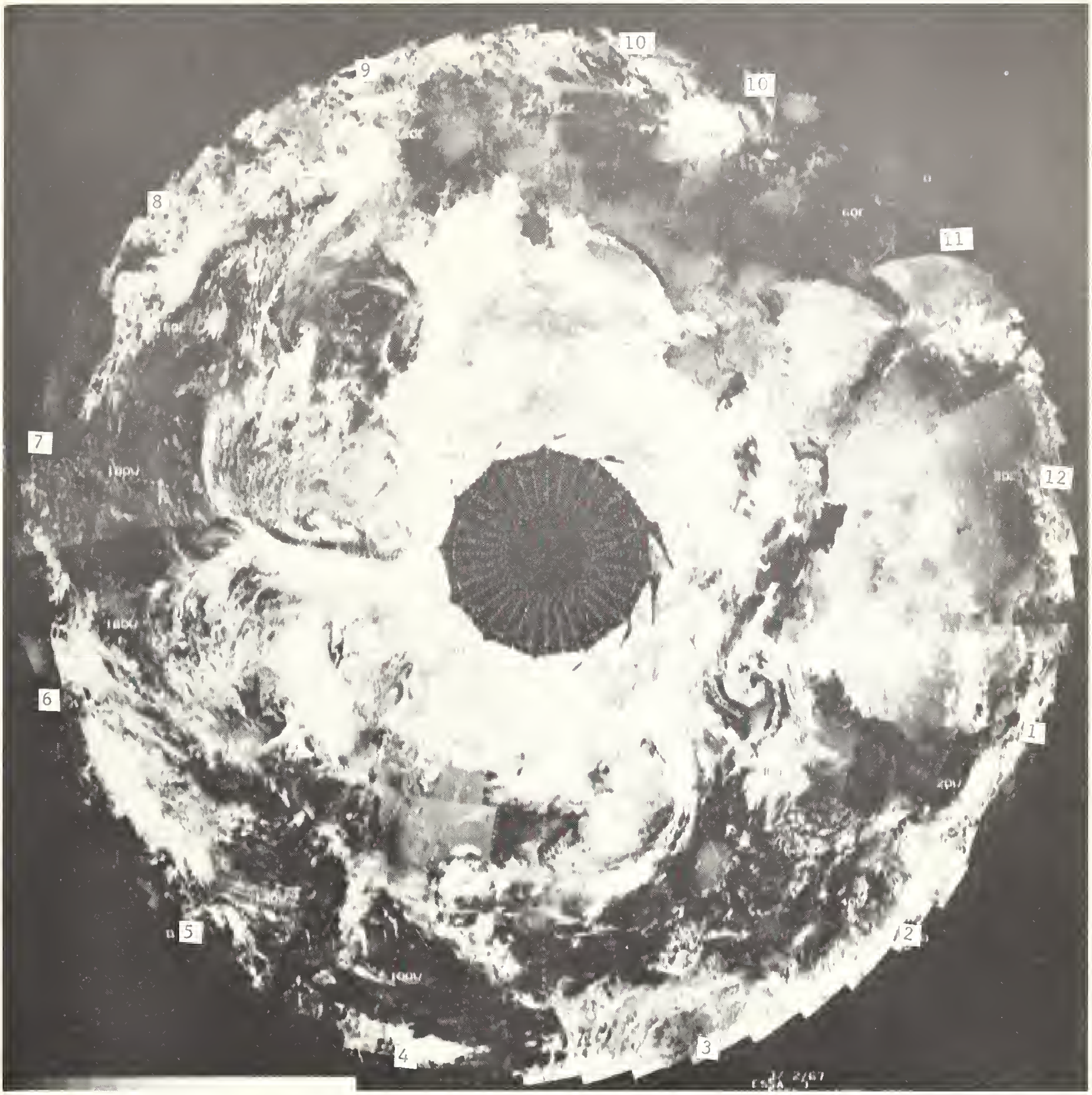
3/ 1/67
ESSA 3
PASS 1883- 1895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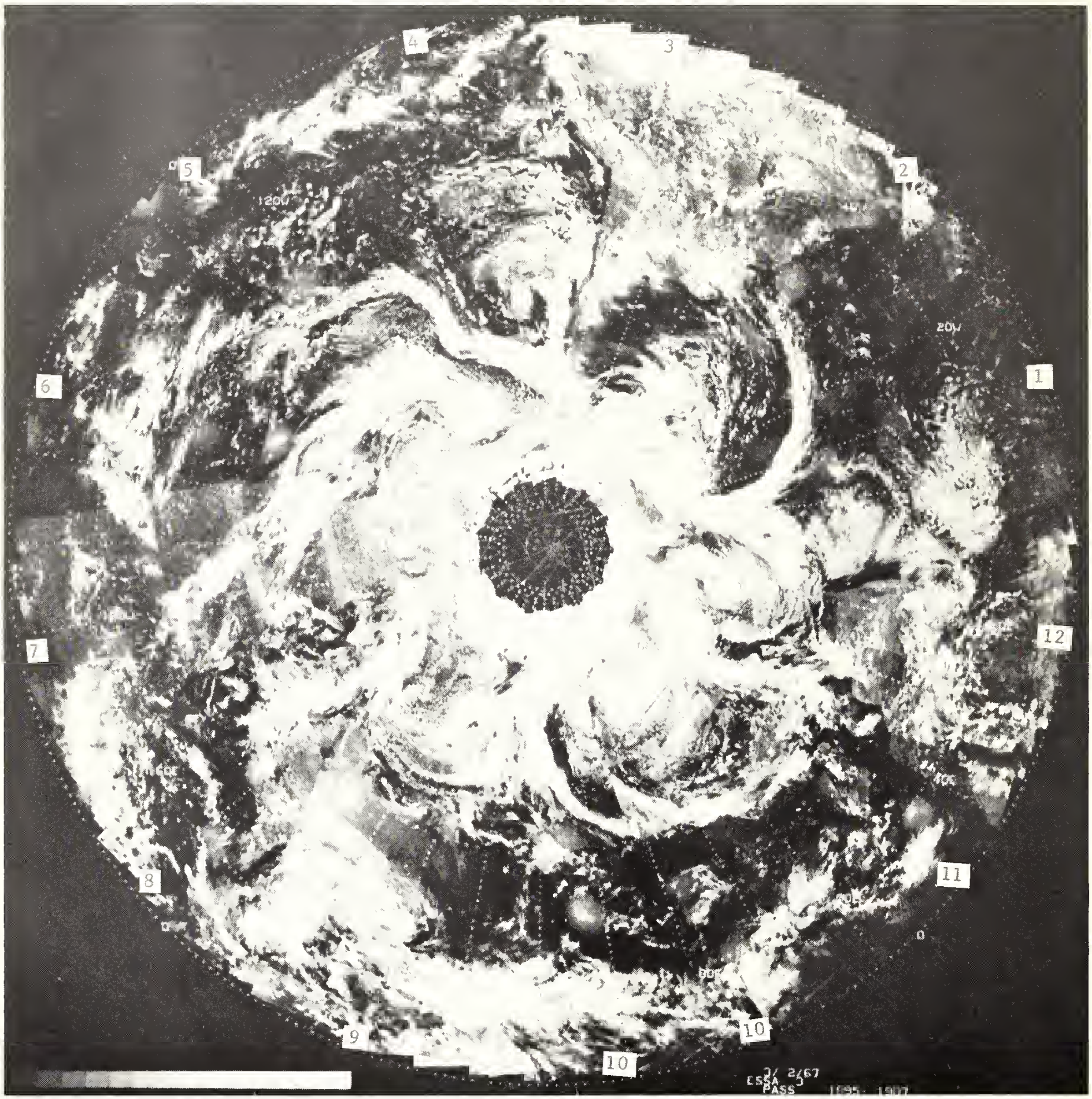
ESSA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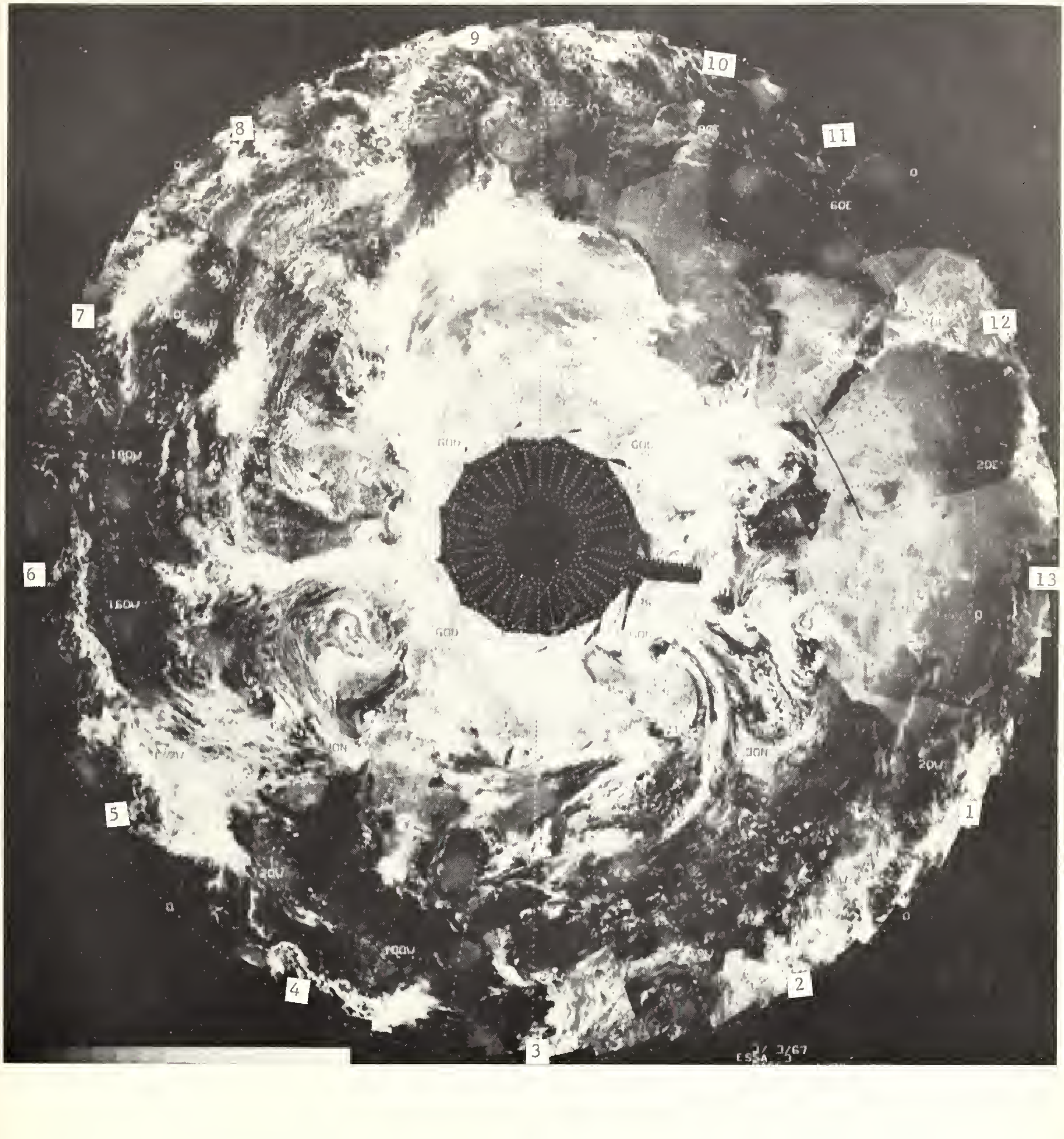
ESSA 3
PASS 1895- 1907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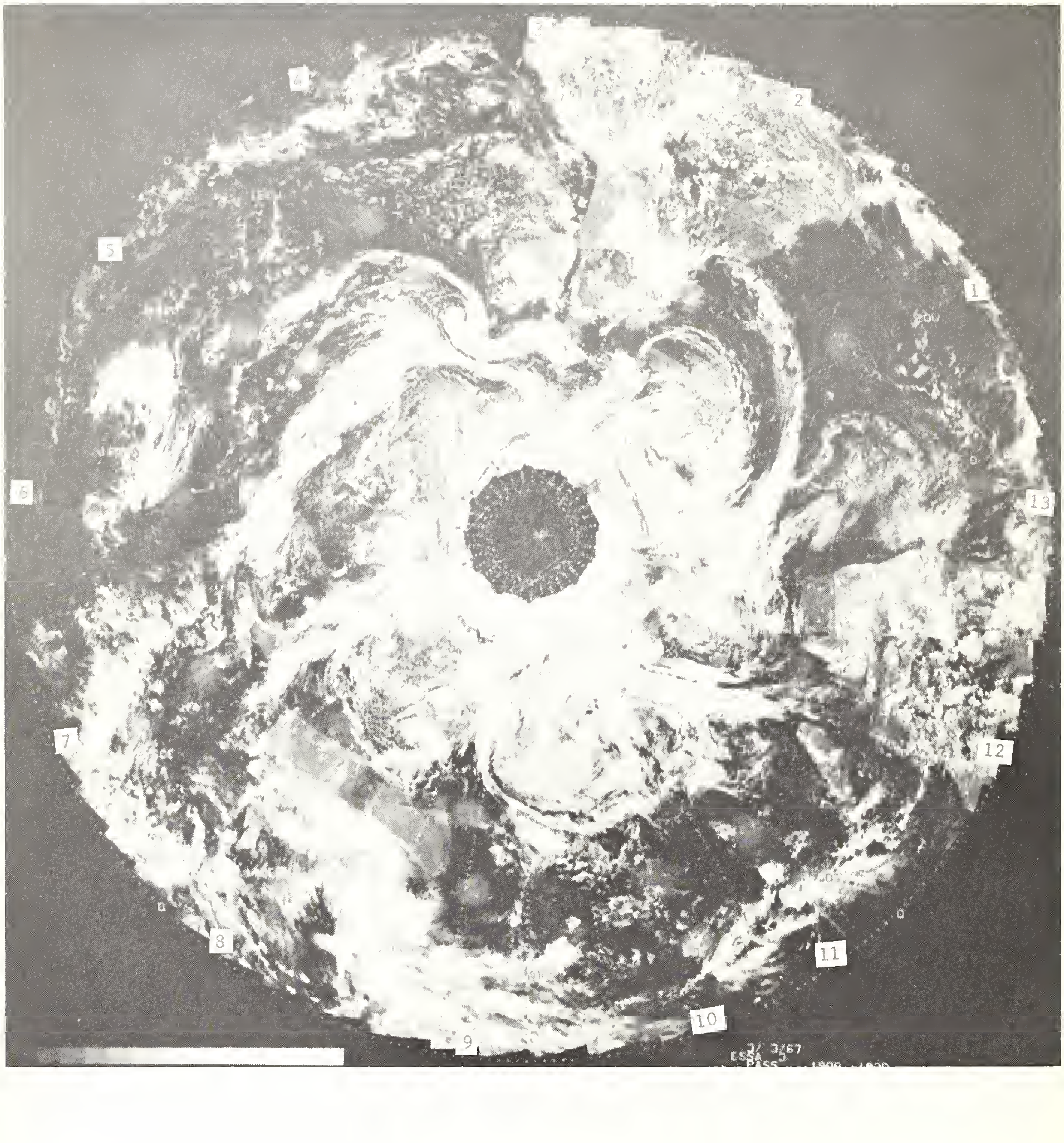
20W
100W
ESSA 3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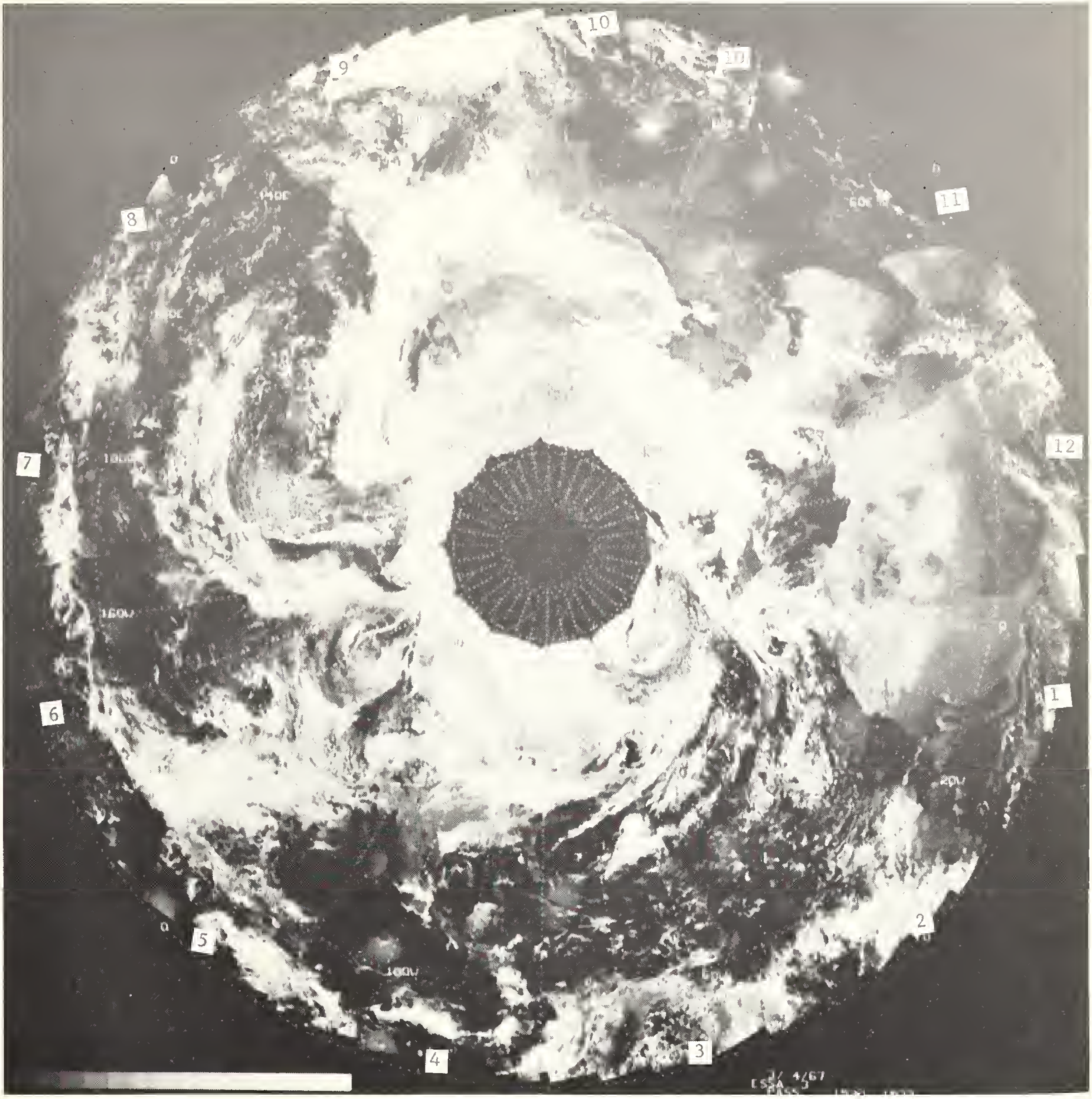
7/ 3/67
ESSA 5
PASS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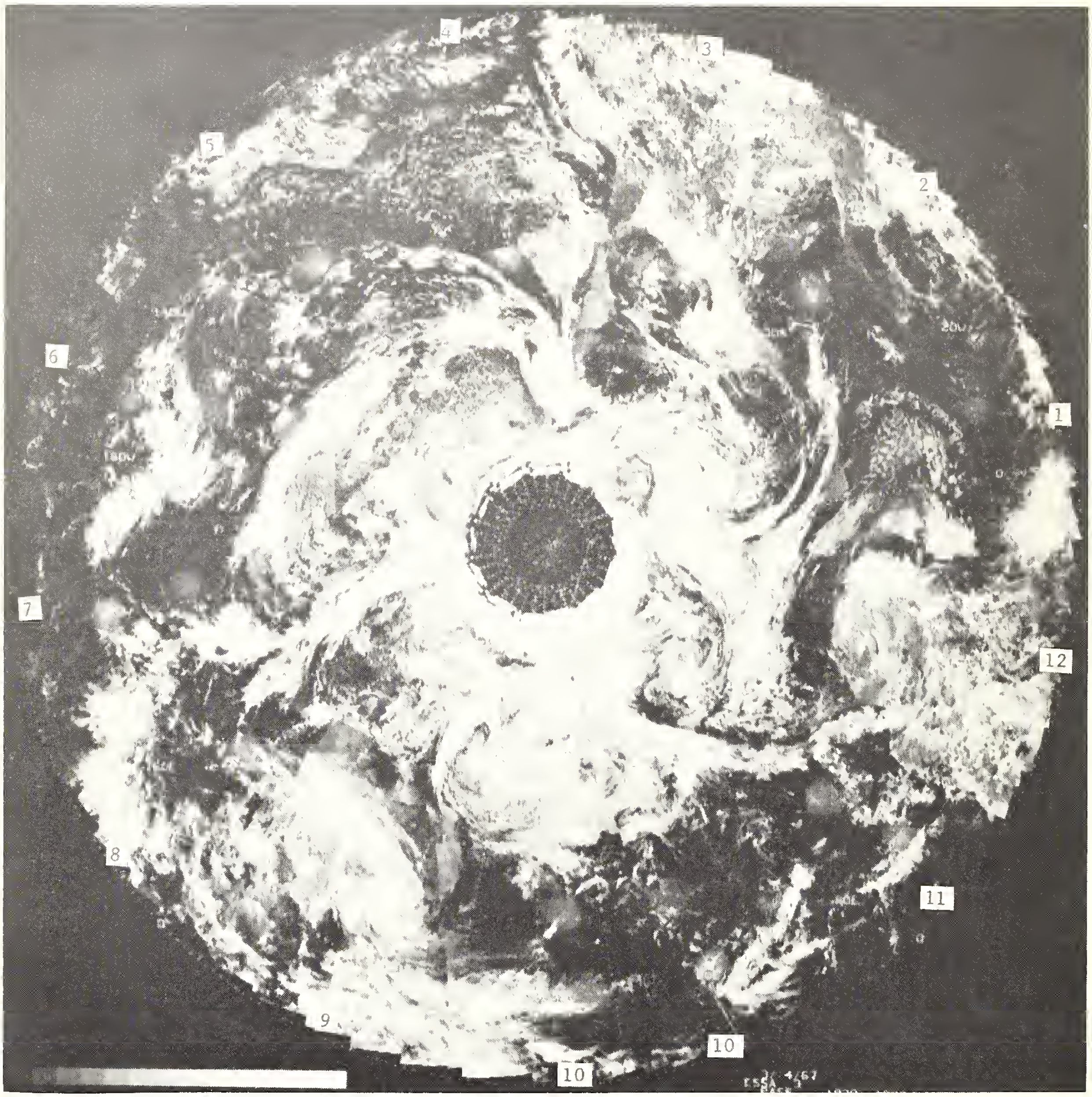
3/ 4/67
ESSA 3
PASS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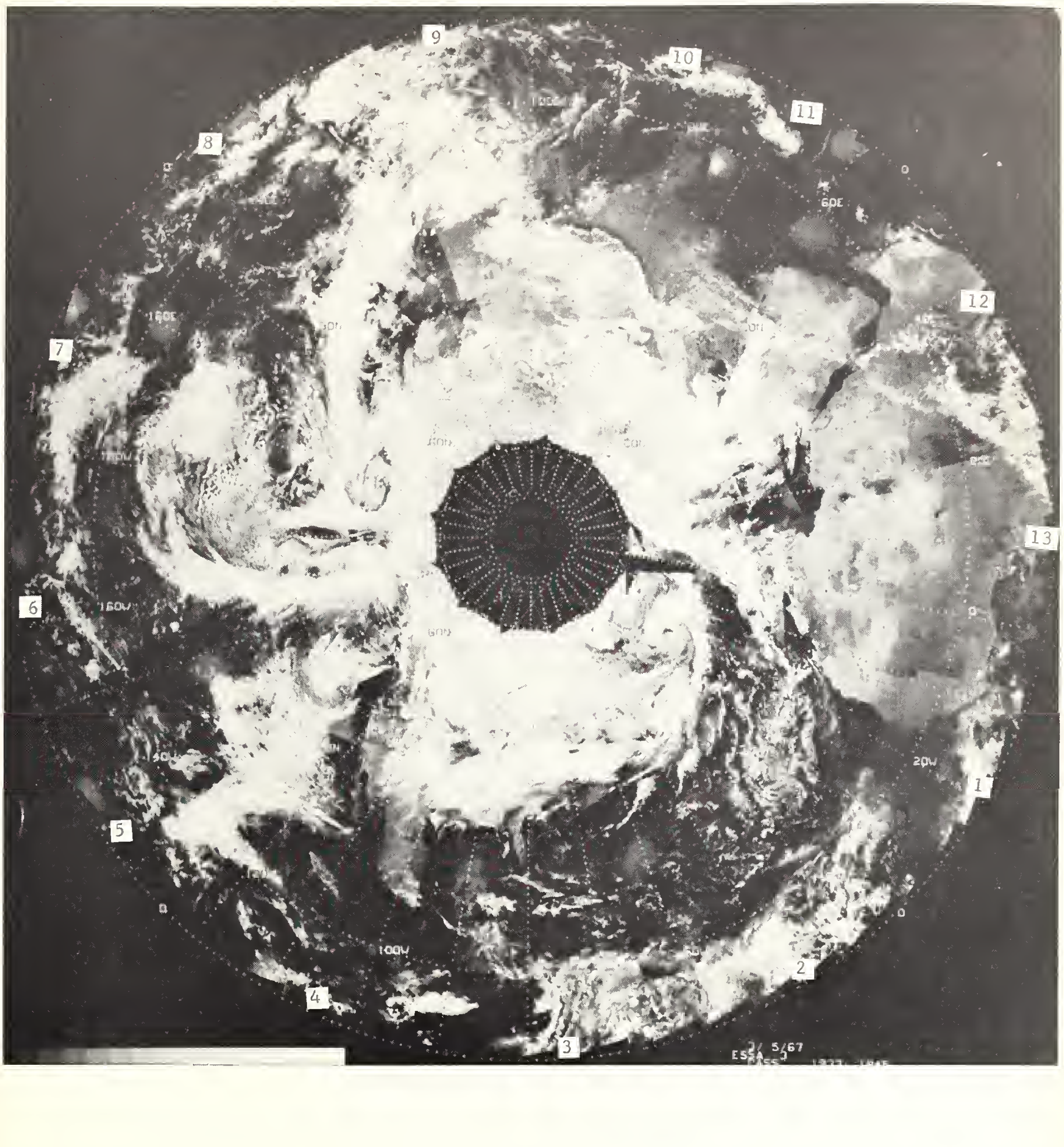
ESSA
4/67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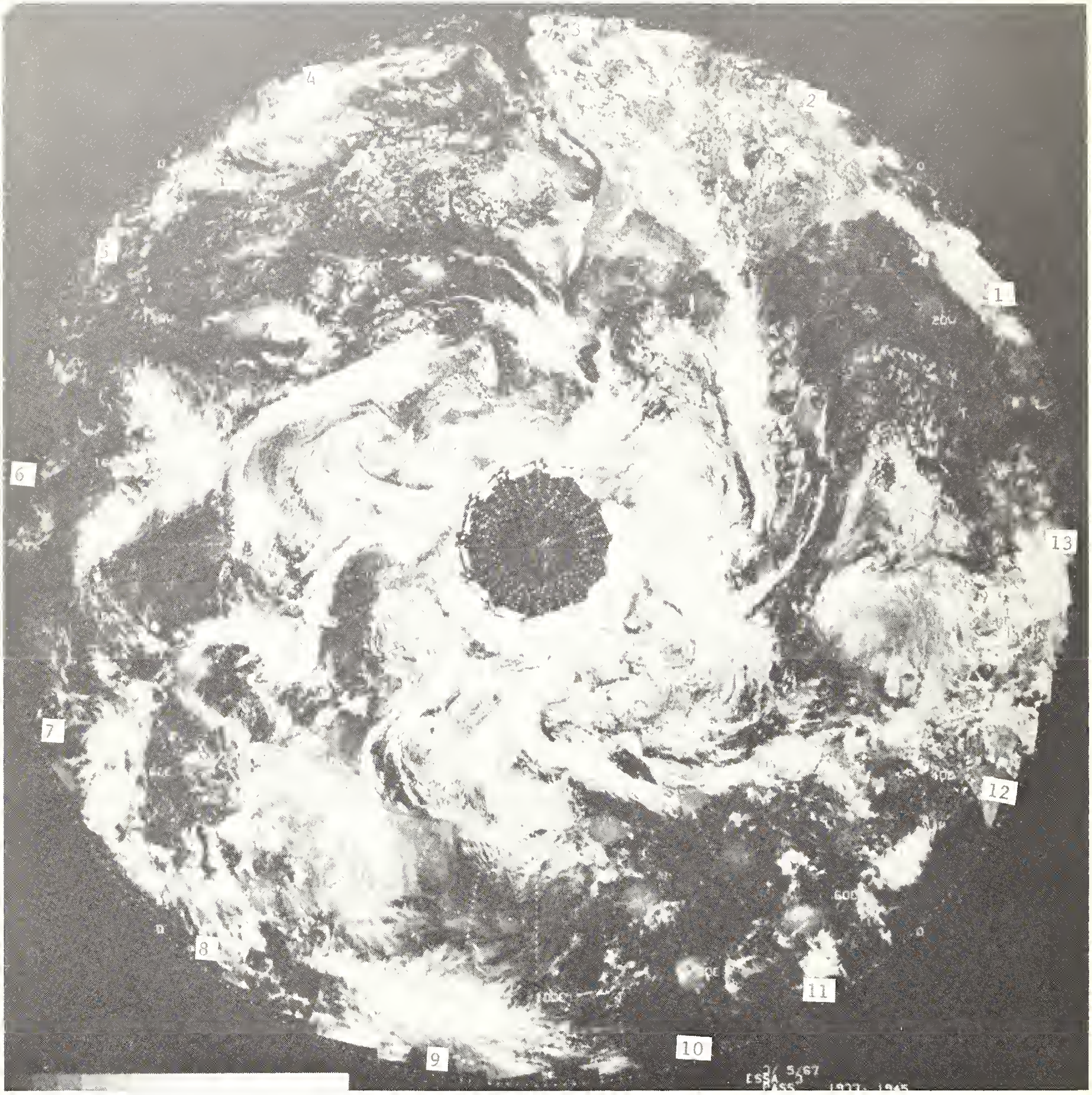
ESSA 3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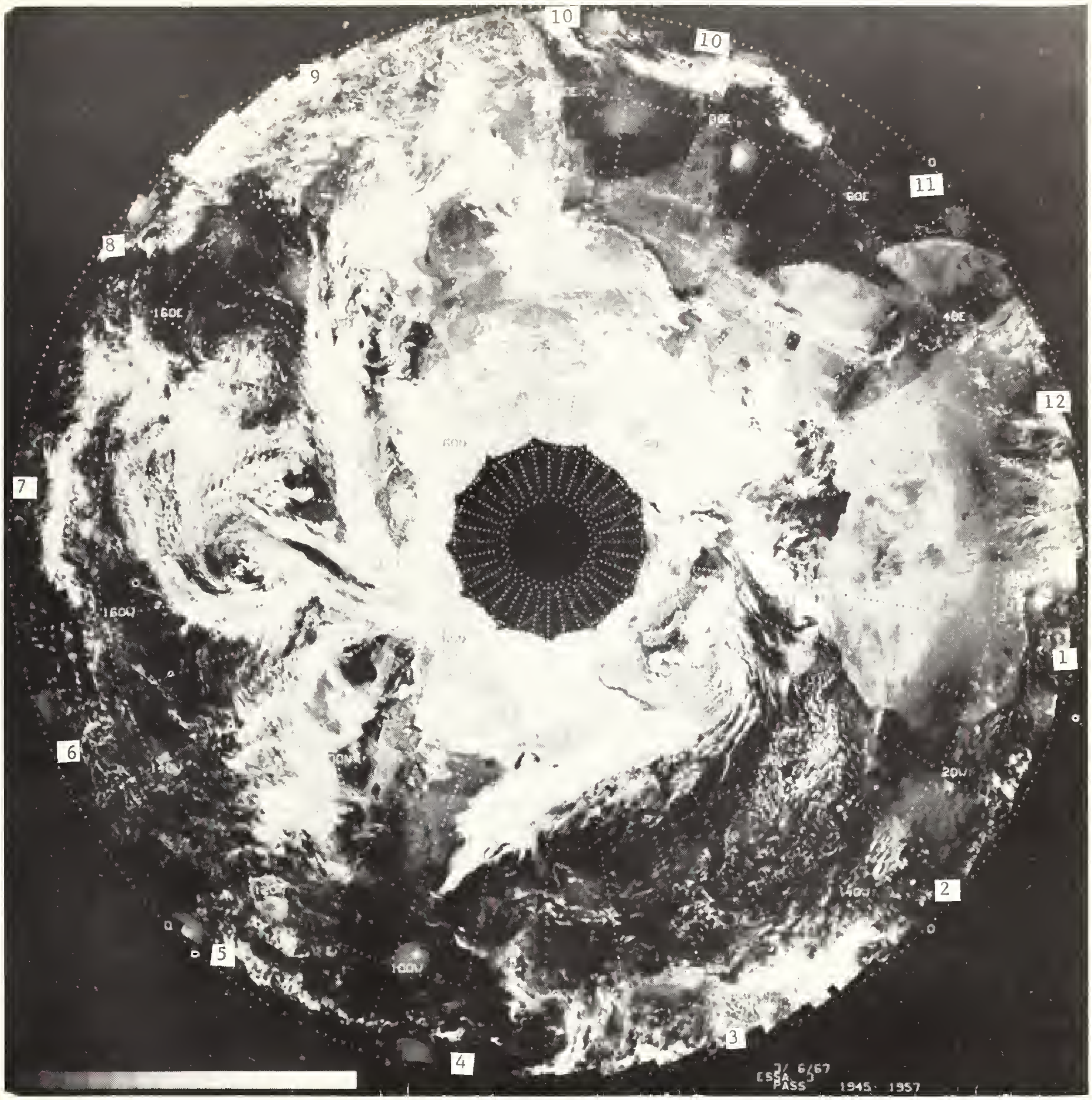
ESSA 3
PASS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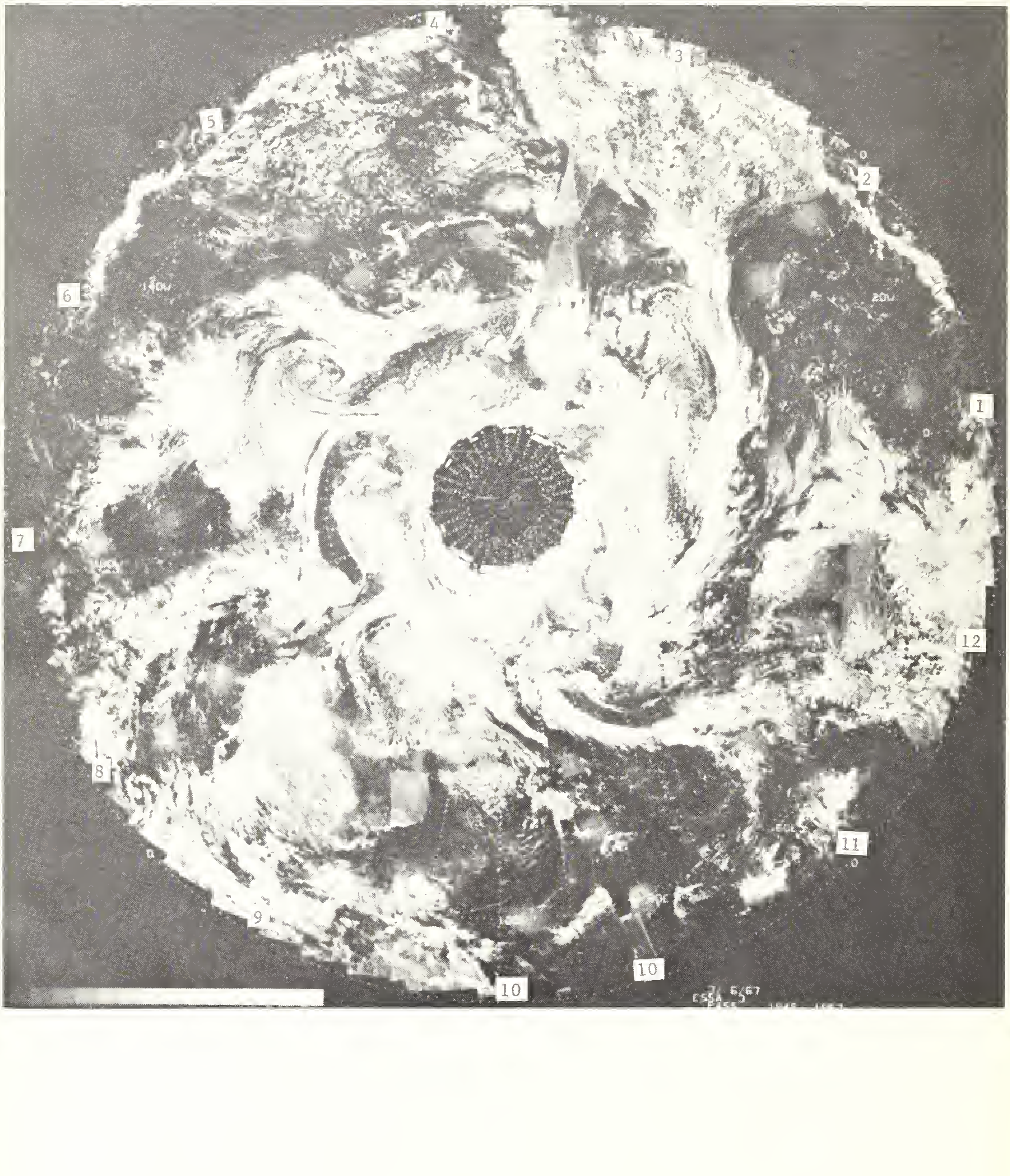
3
4
3/ 6/67
ESSA 3
PASS 1945 1957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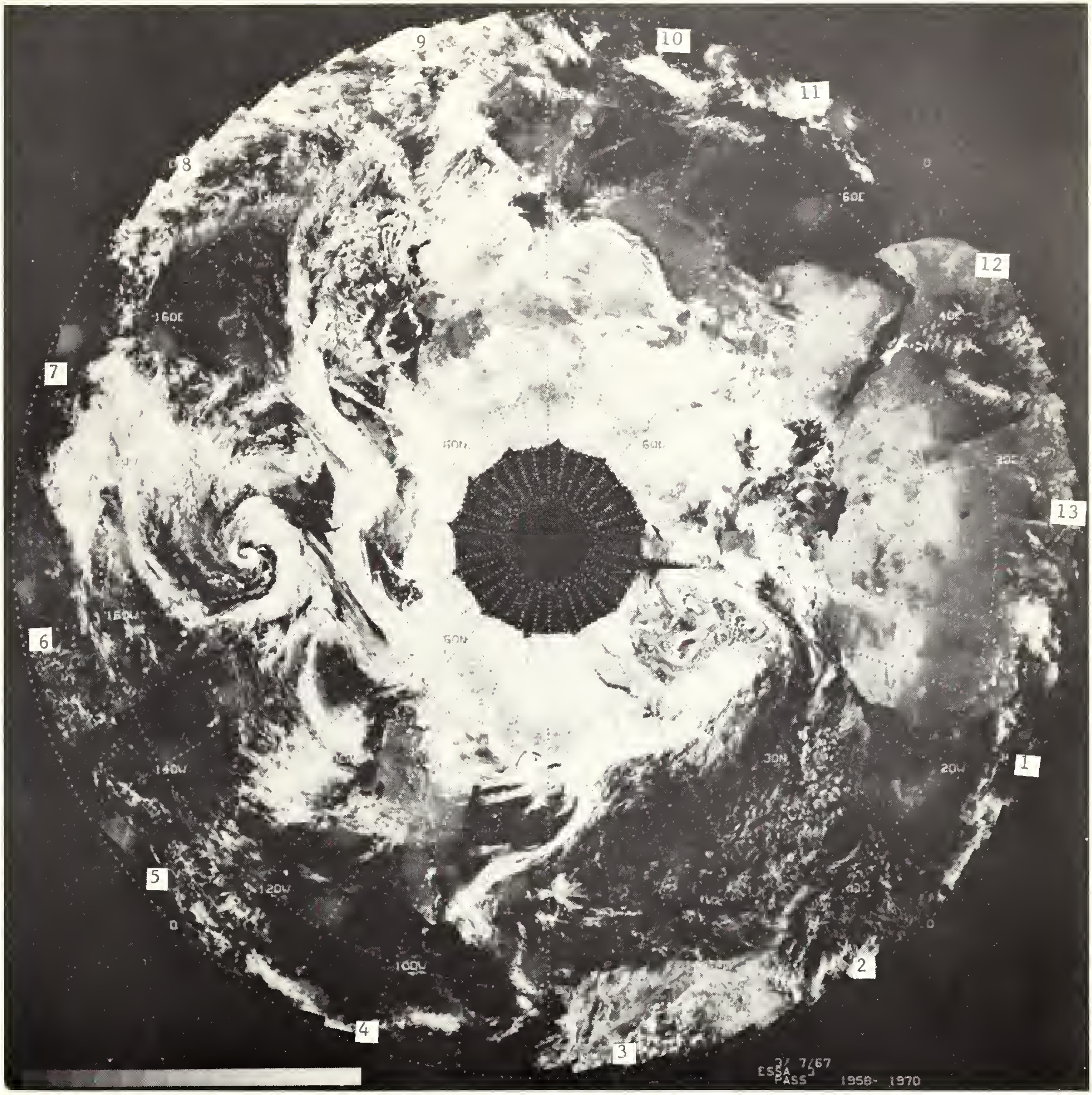
7/6/67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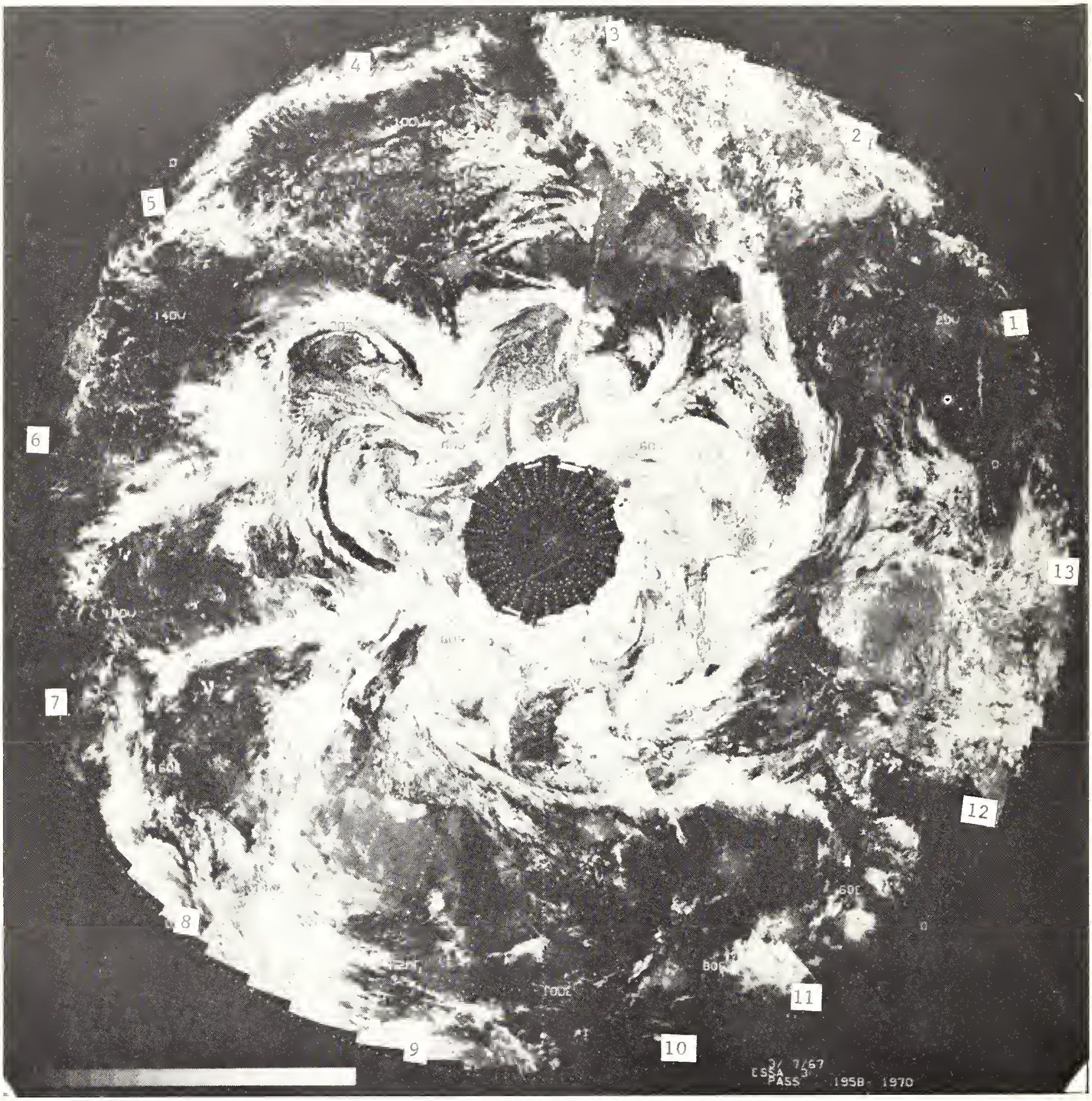
3/ 7/67
ESSA 3
PASS 1958- 1970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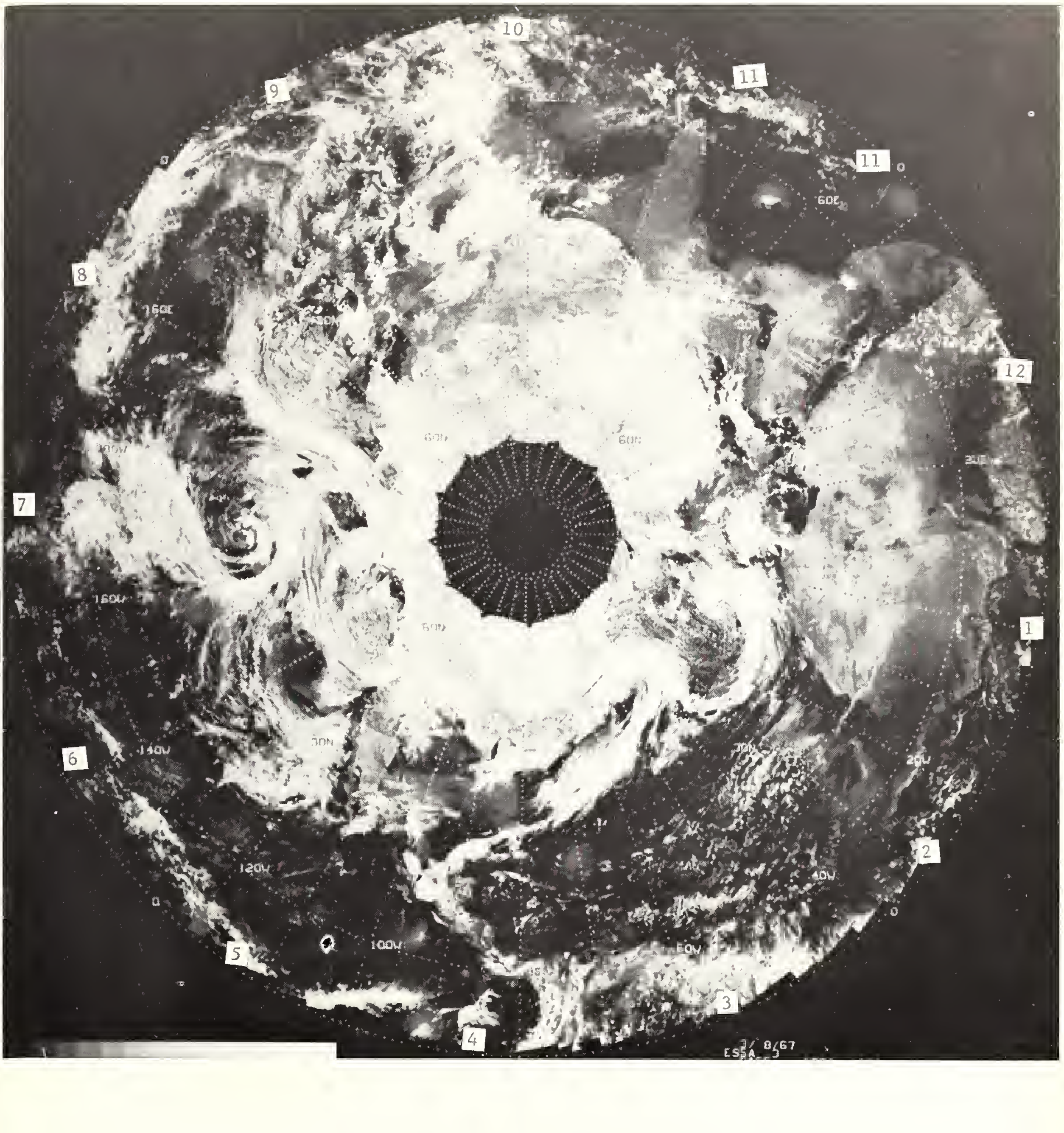
ESSA 3
PASS 1958-1970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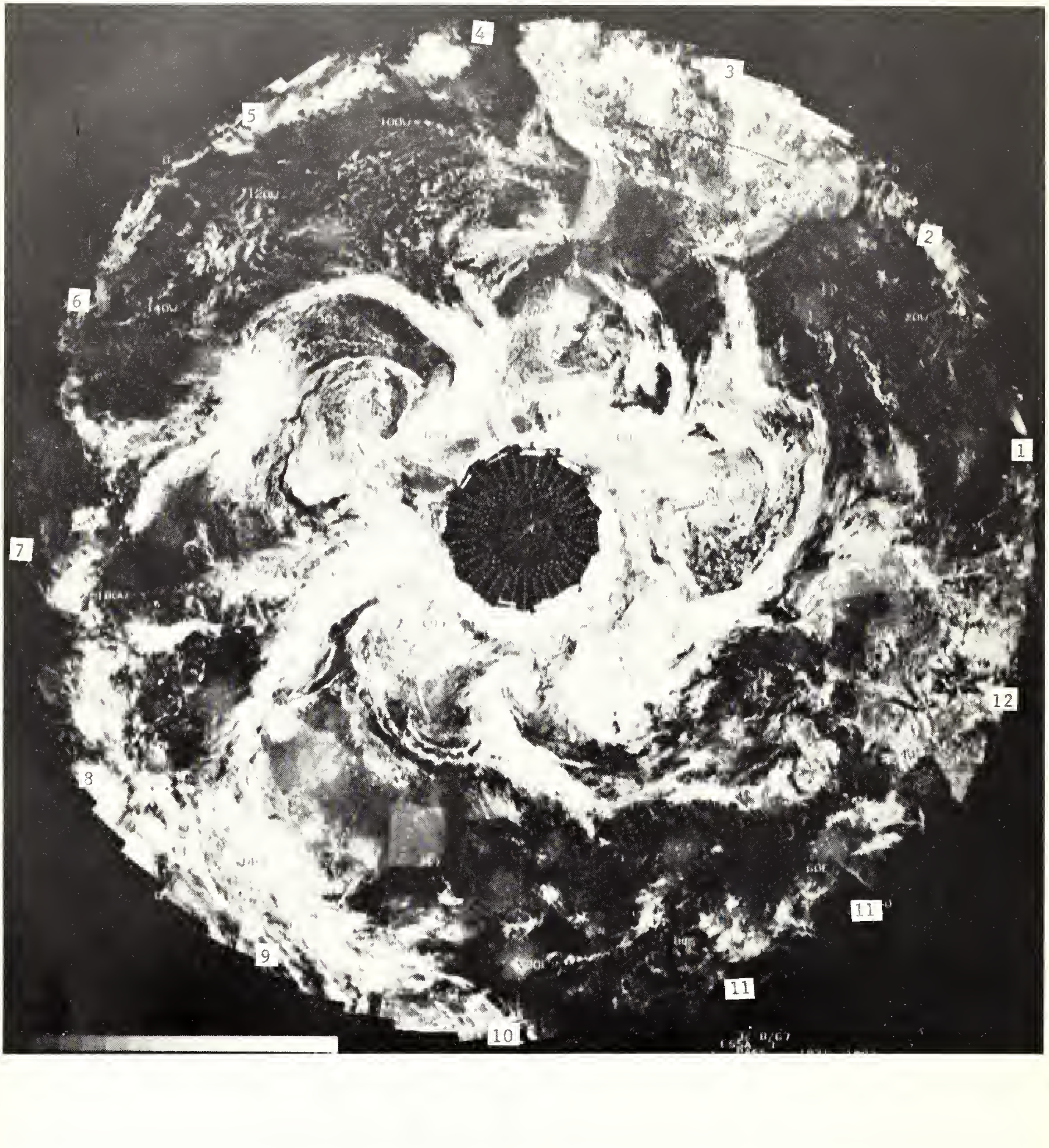
3/ 8/67
ESSA 3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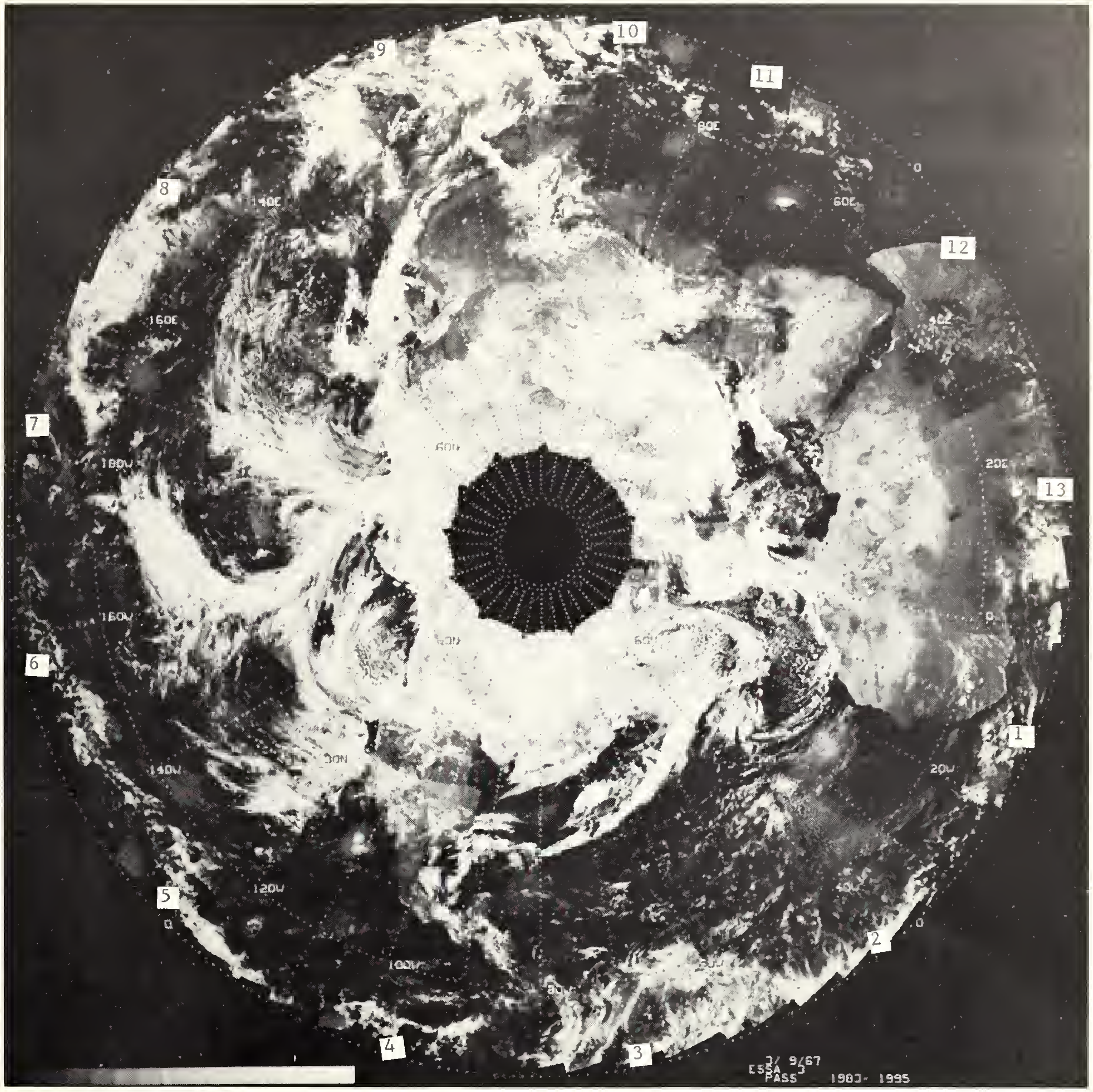
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80W
60W
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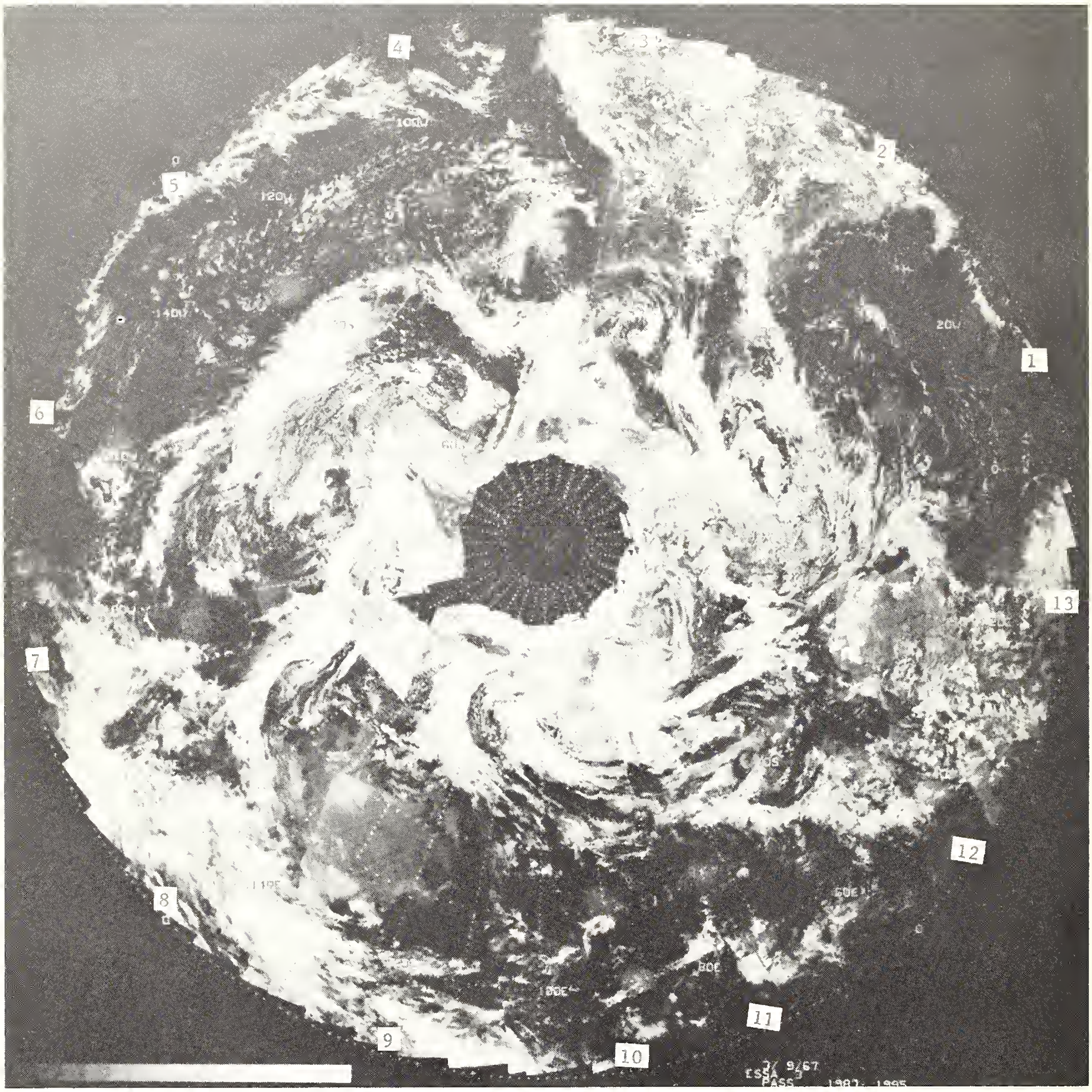
3/ 9/67
ESSA 3
PASS 1983- 1995



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60E
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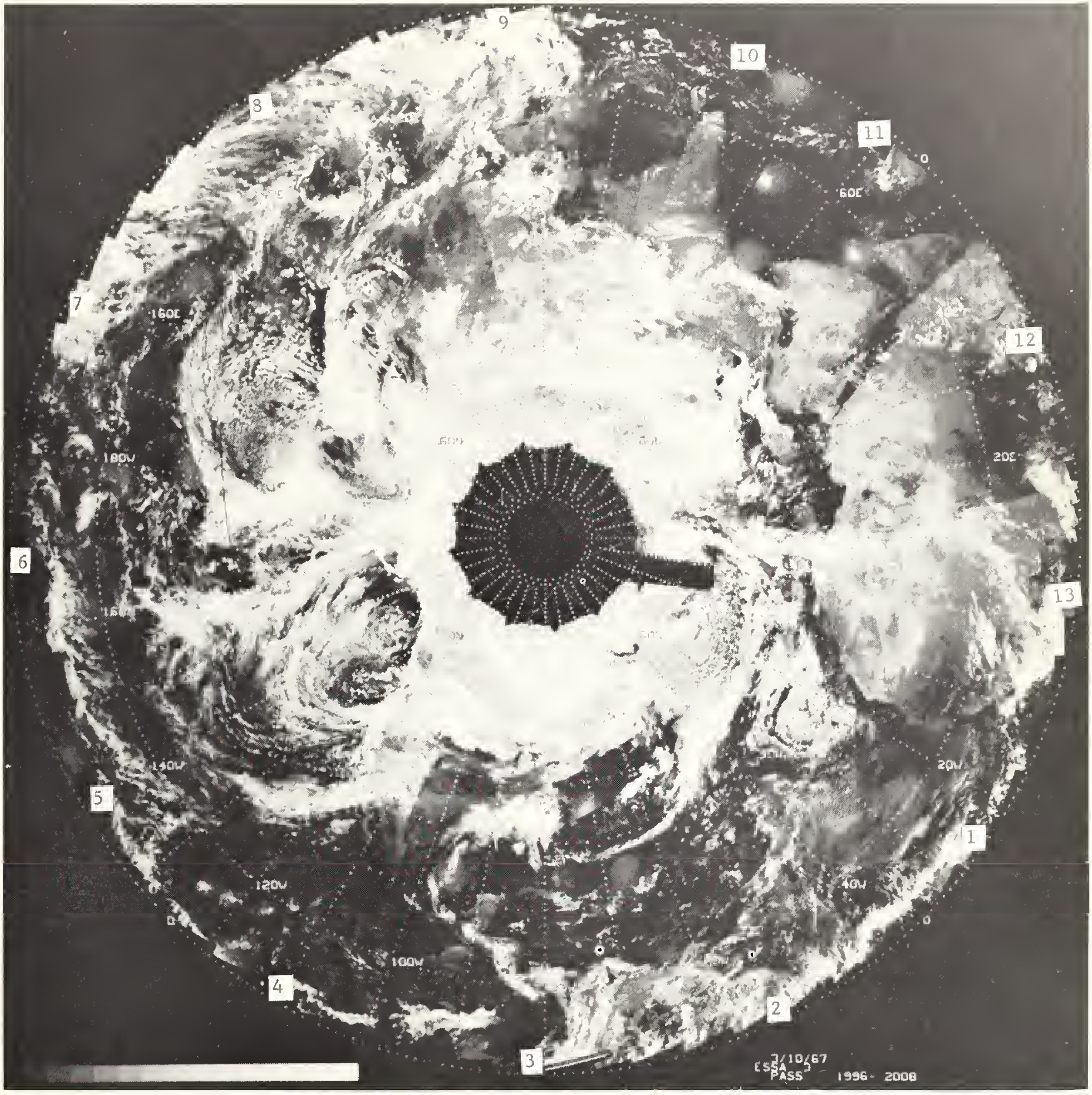
ESSA 3
PASS 1987- 1995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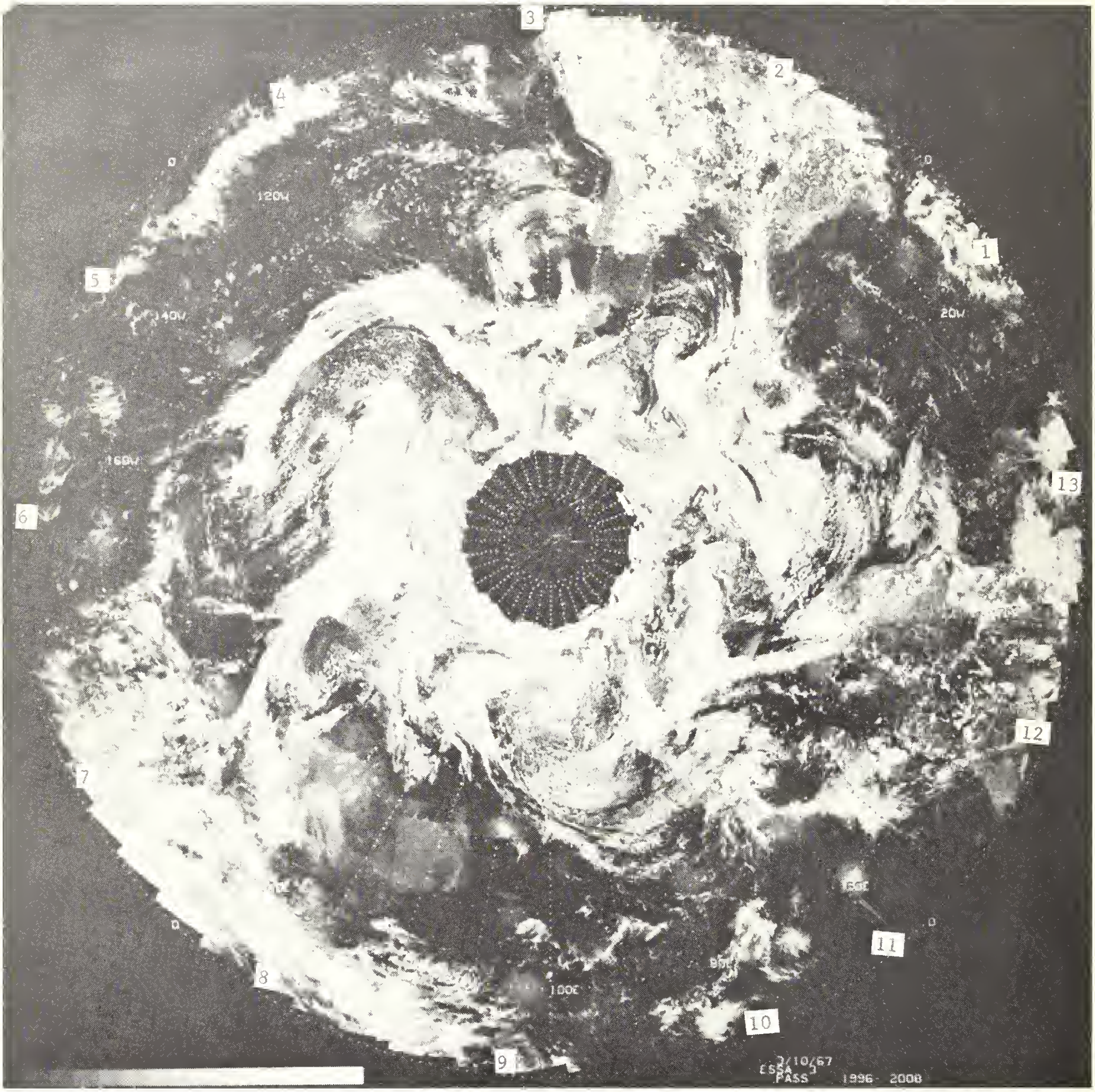
3/10/67
ESSA 3
PASS 1996- 2008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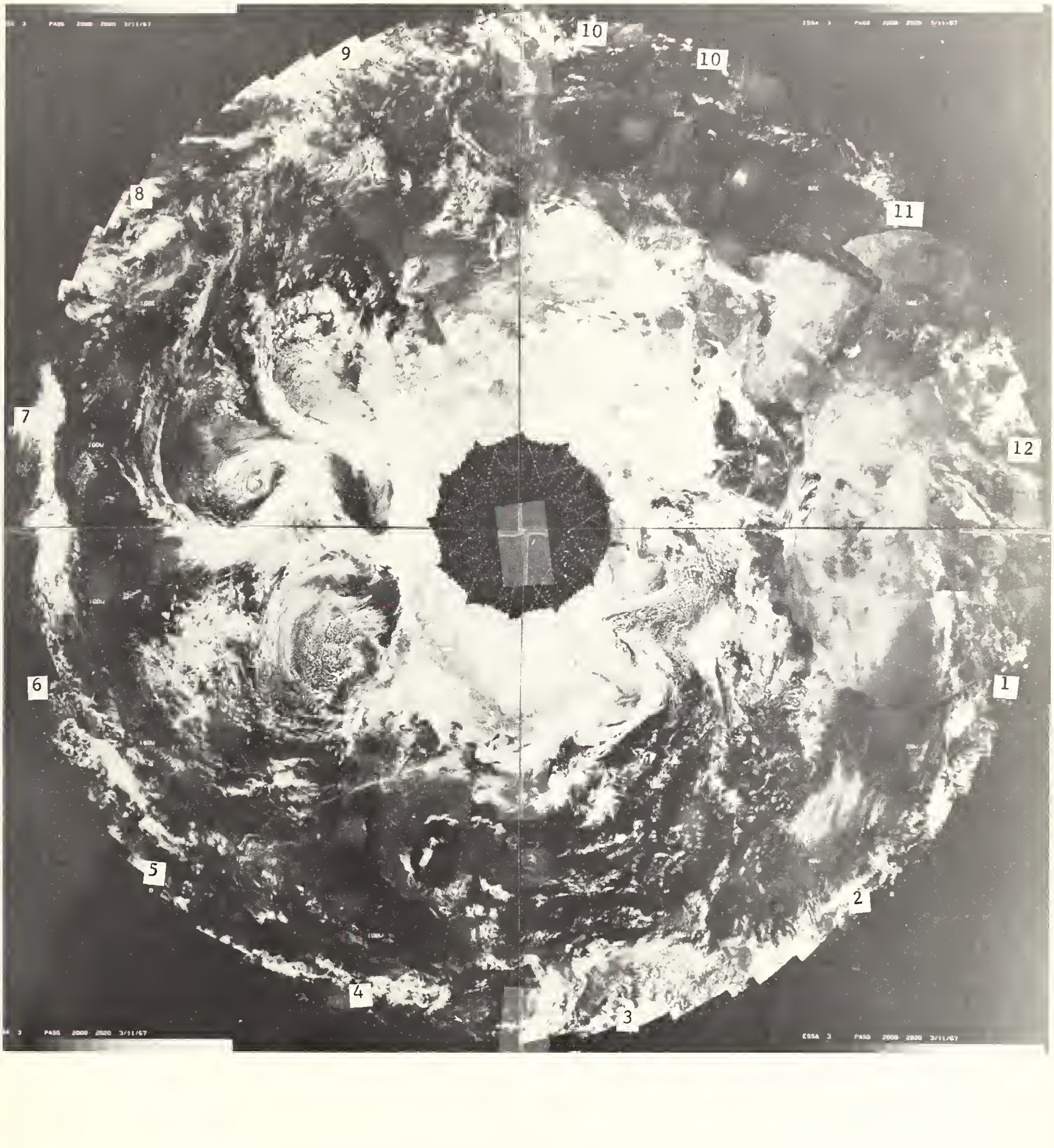
3/10/67
ESSA 3
PASS 1996- 2008


ESSA 3 PASS 2008 2020 3/11/67
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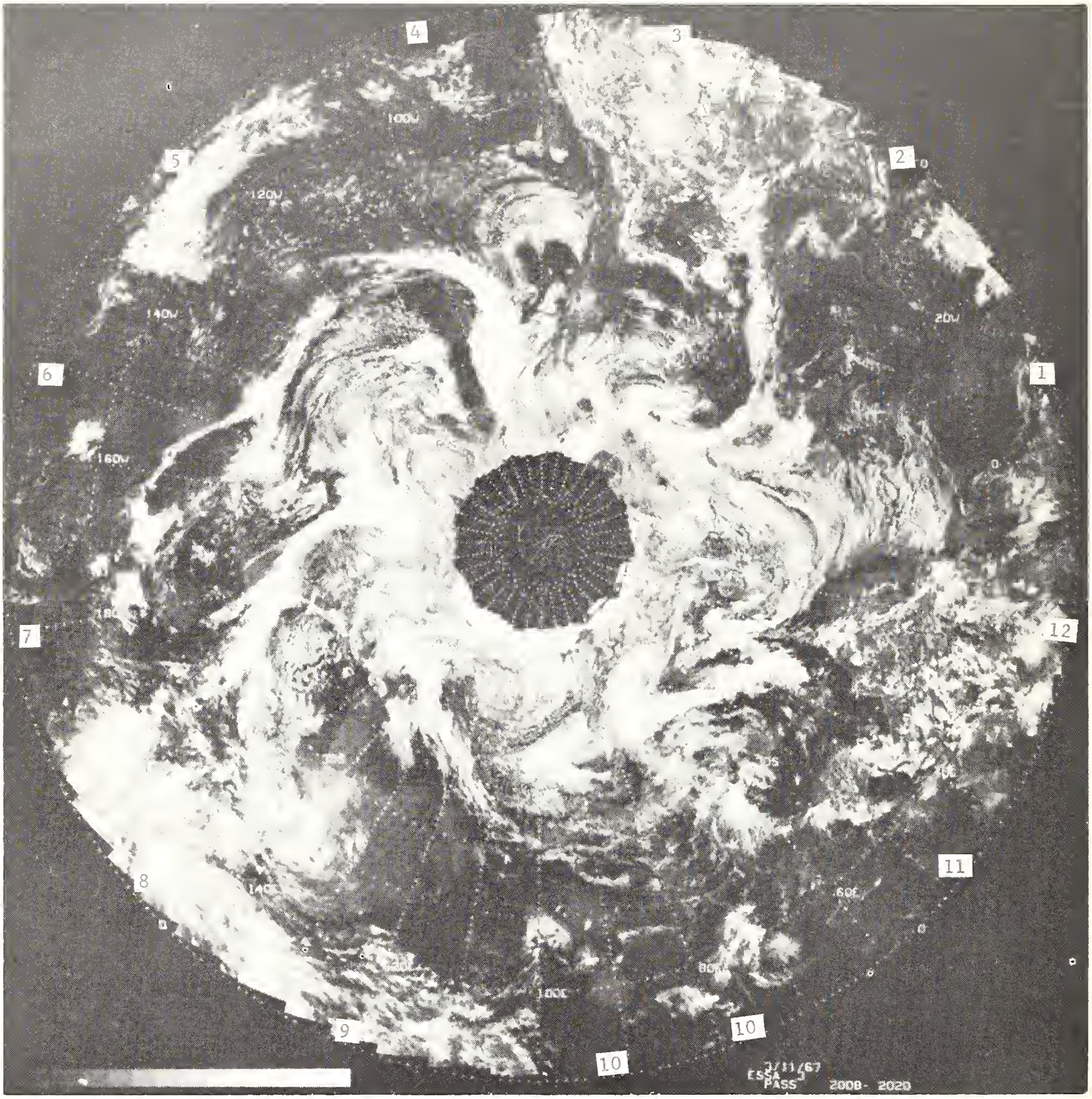
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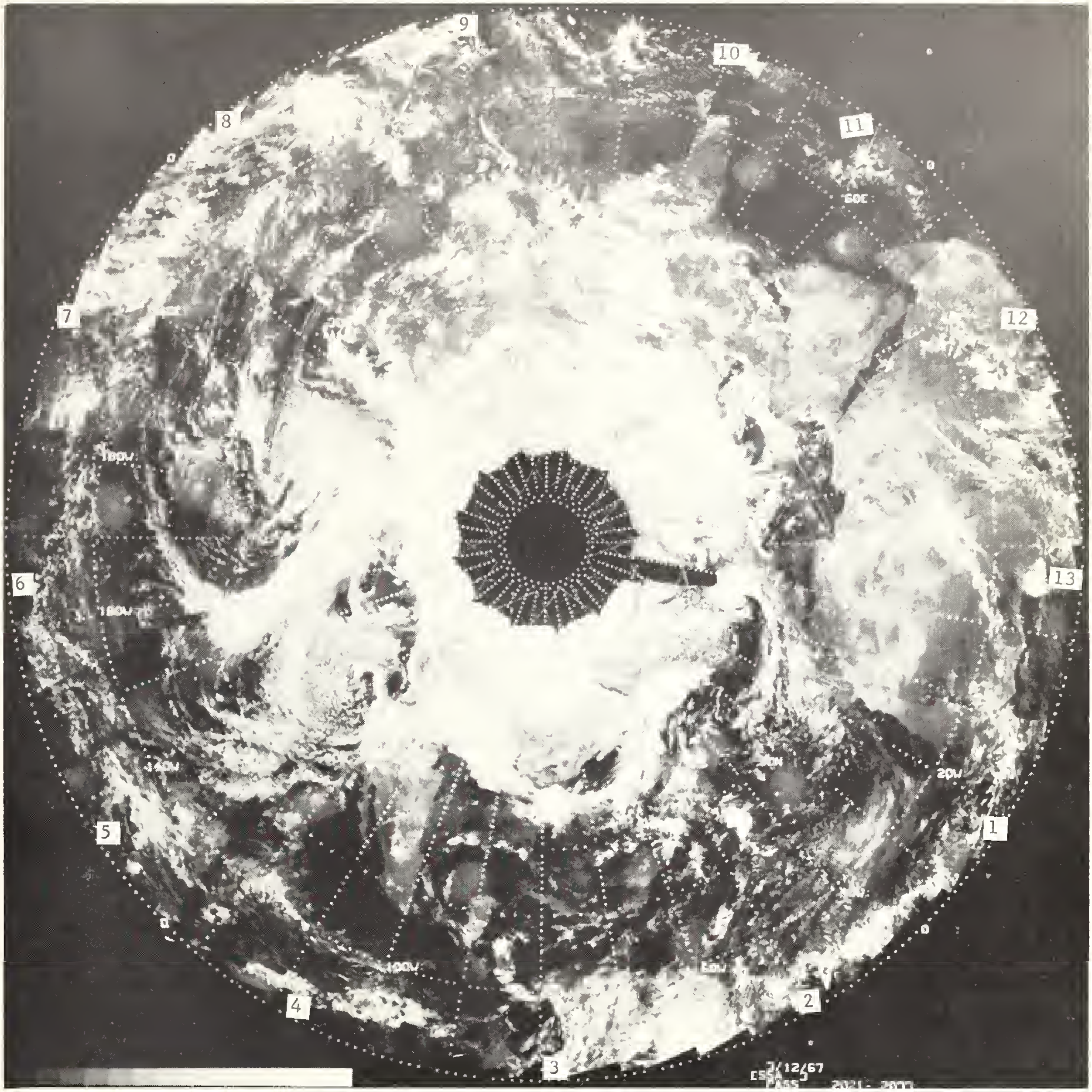
3/11/67
ESSA 3
PASS 2008- 2020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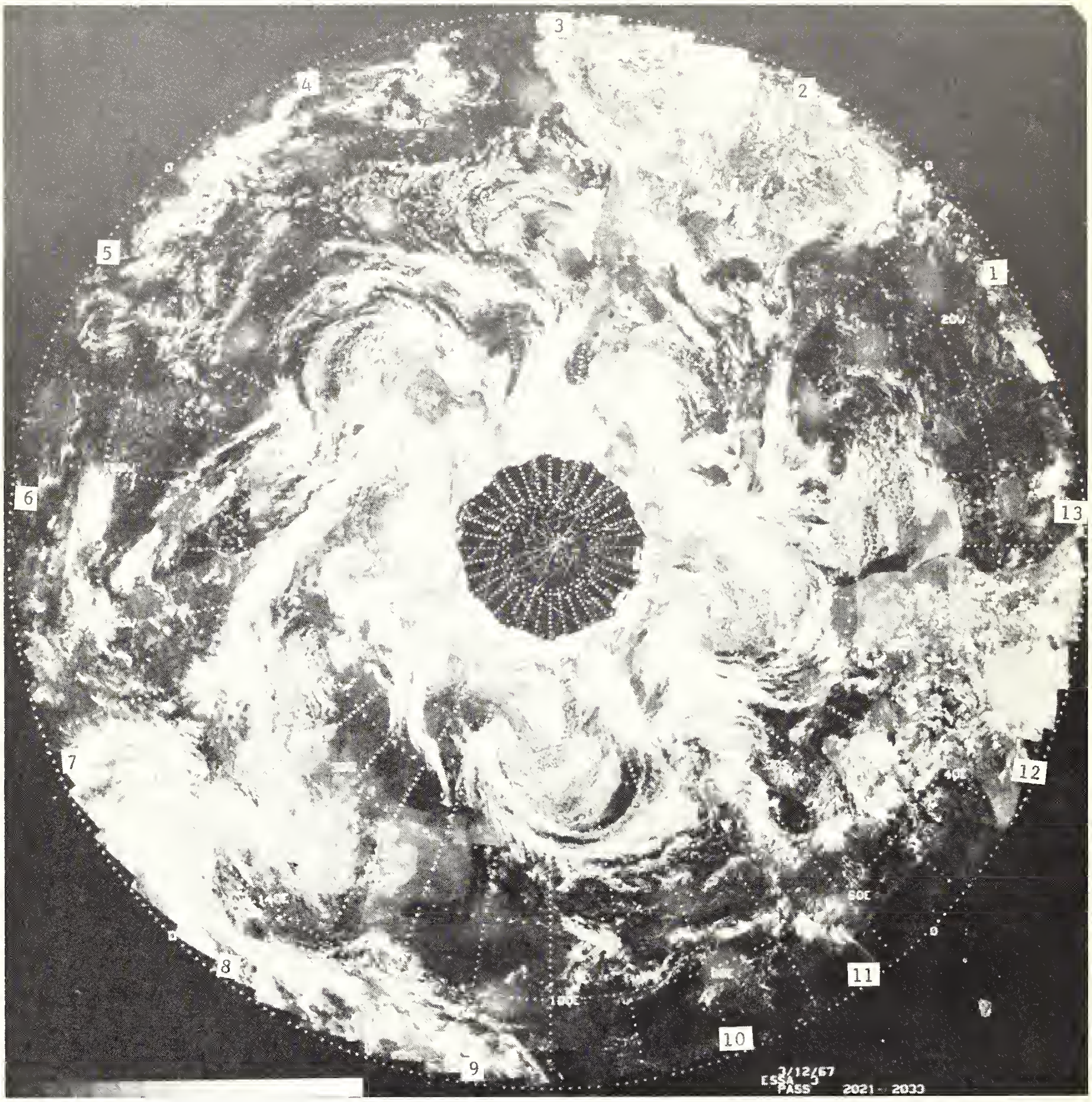
3/12/67
ESSA 5
PASS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100E
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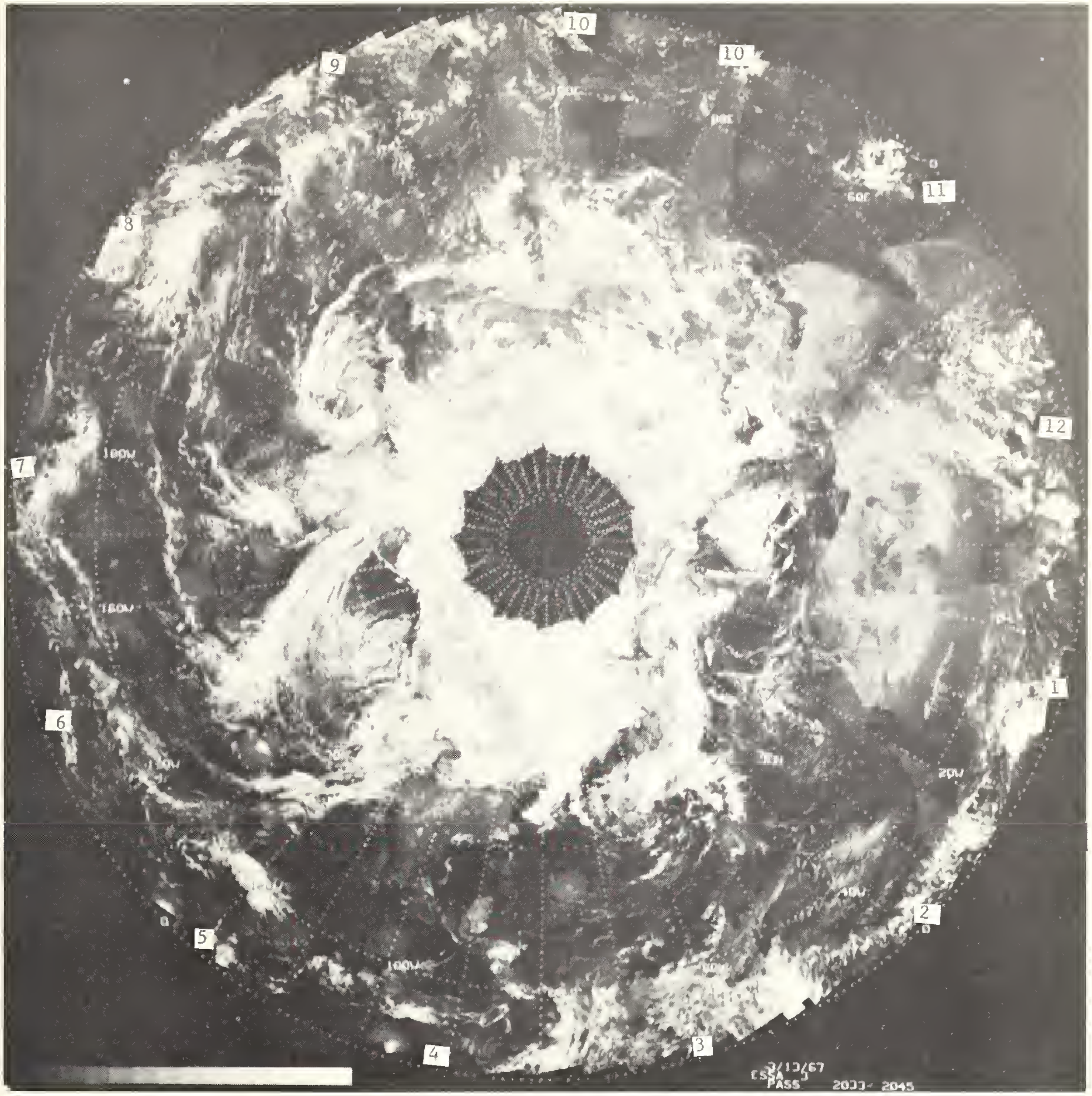
3/12/67
ESSA 3
PASS 2021 - 2033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100W
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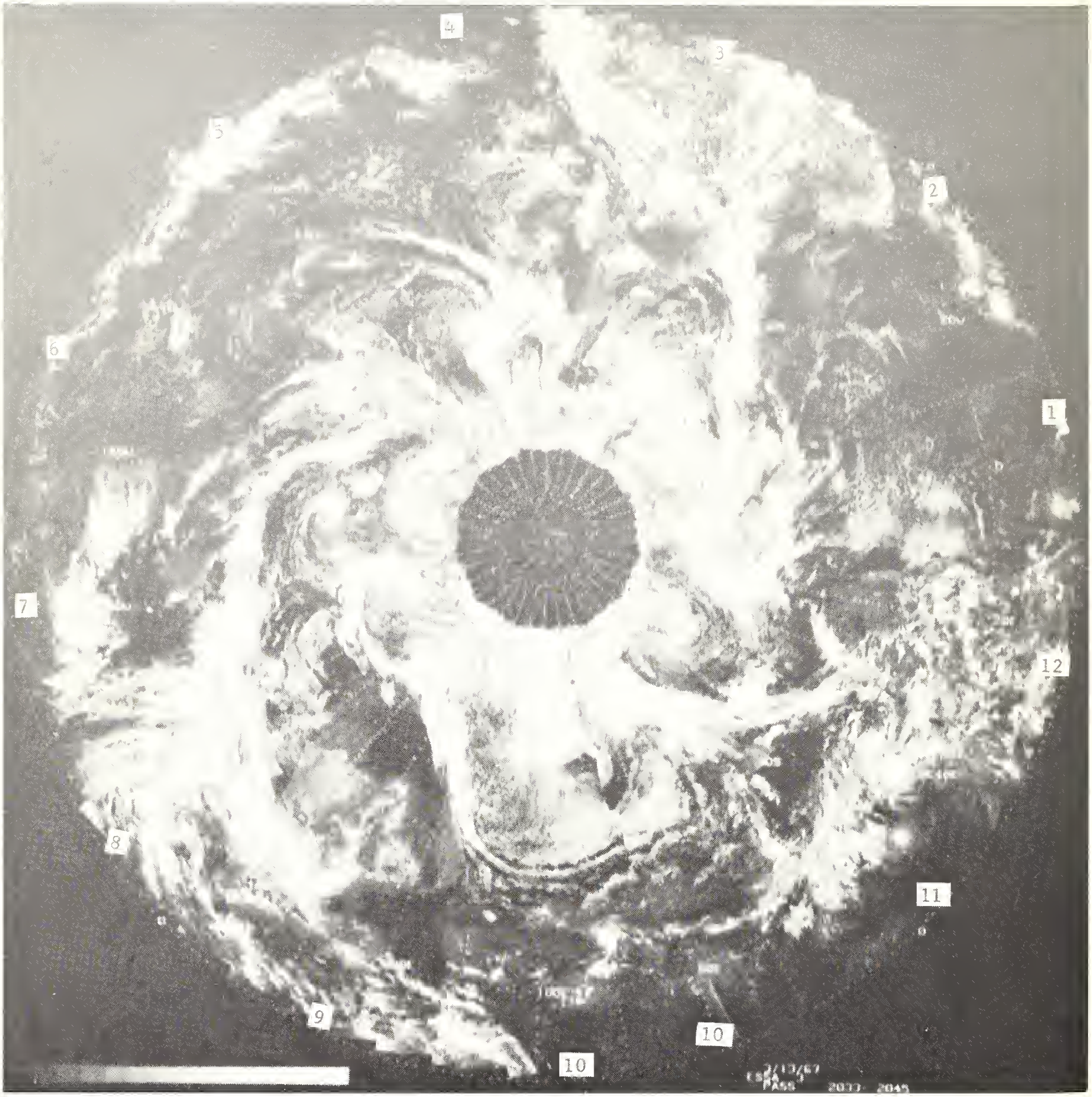
3/13/67
ESSA 3
PASS 2033- 2045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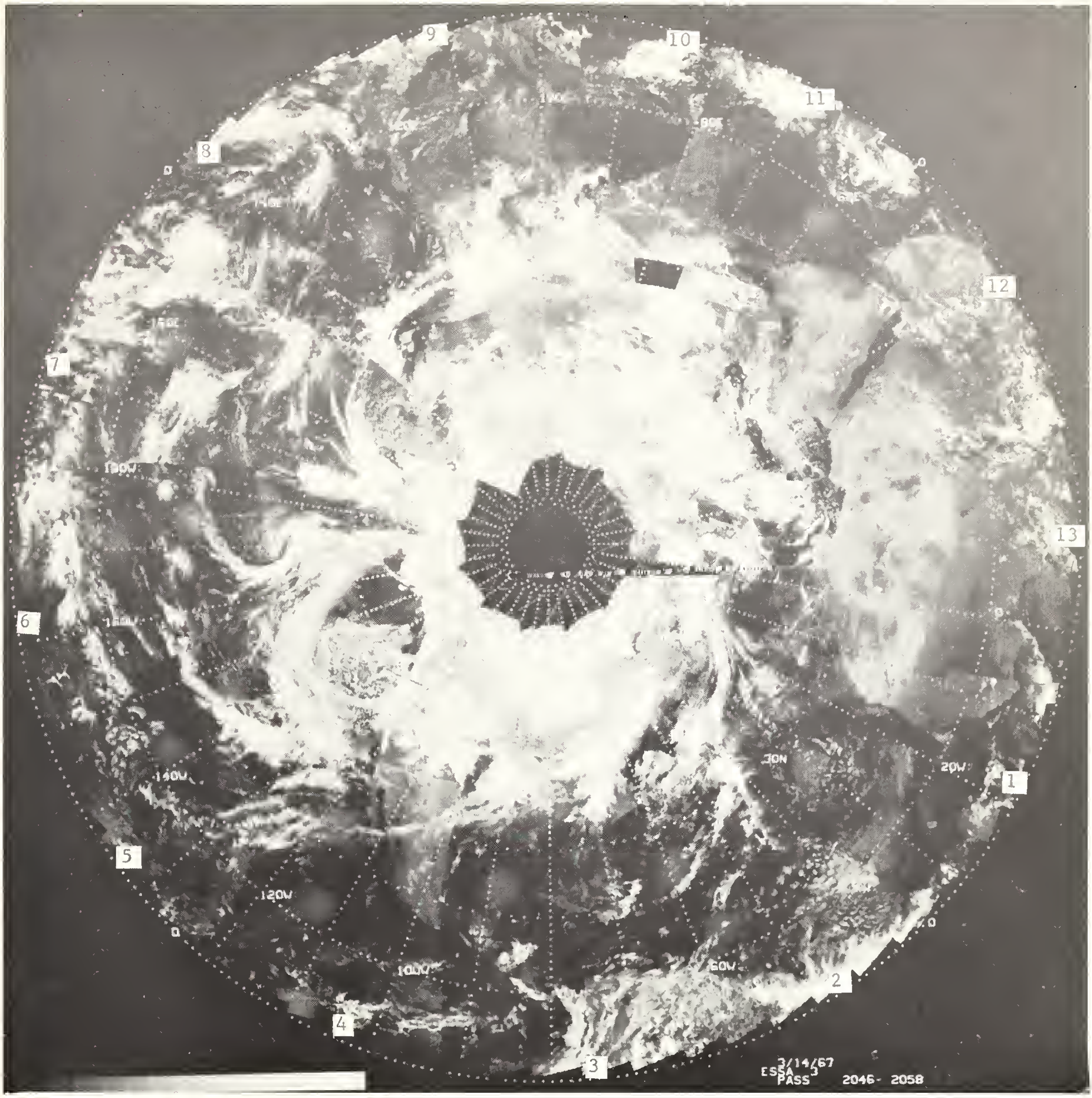
2/13/67
ESSA 3
PASS 2033- 2045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60W
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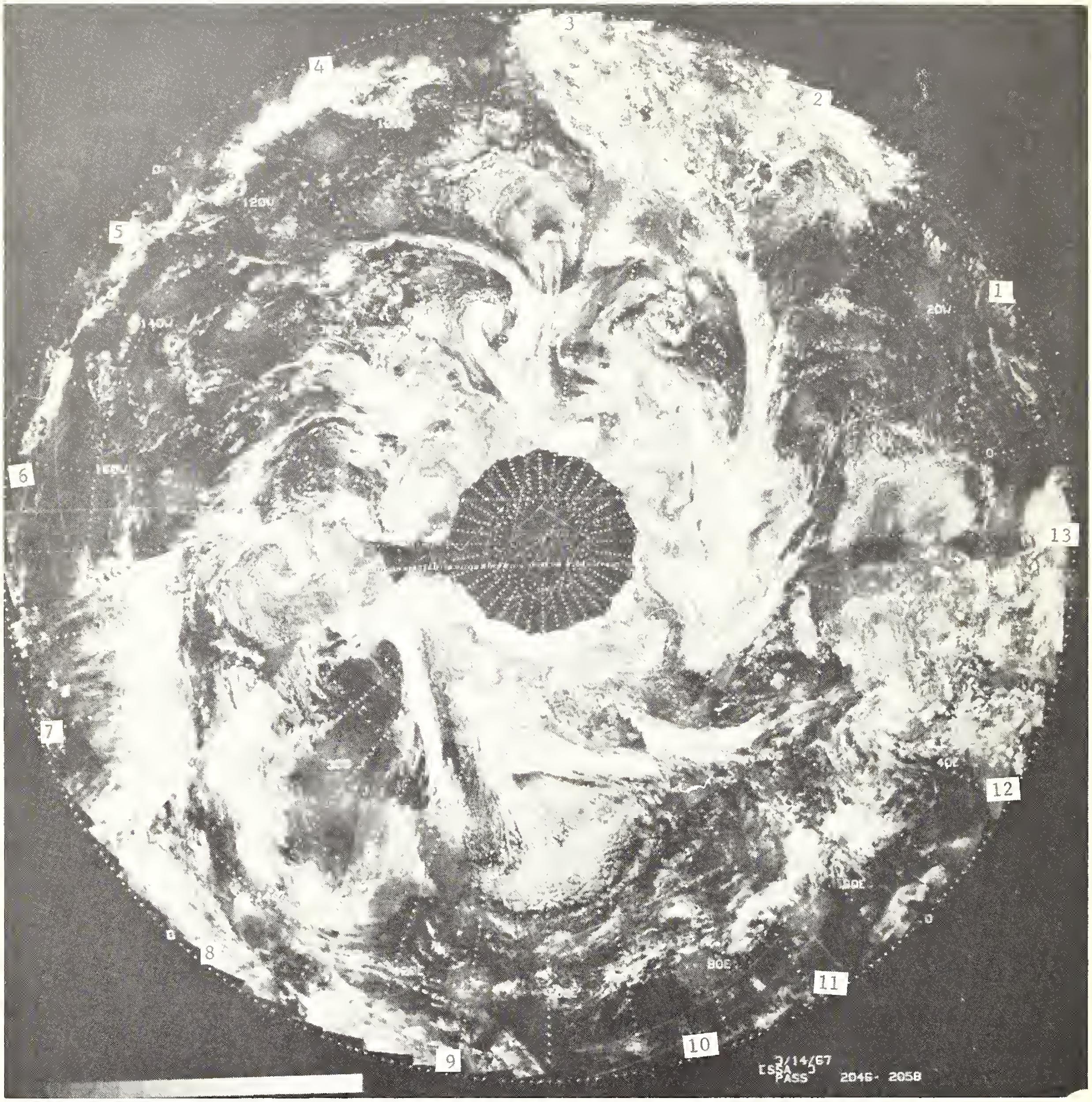
3/14/67
ESSA 3
PASS 2046- 2058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80E
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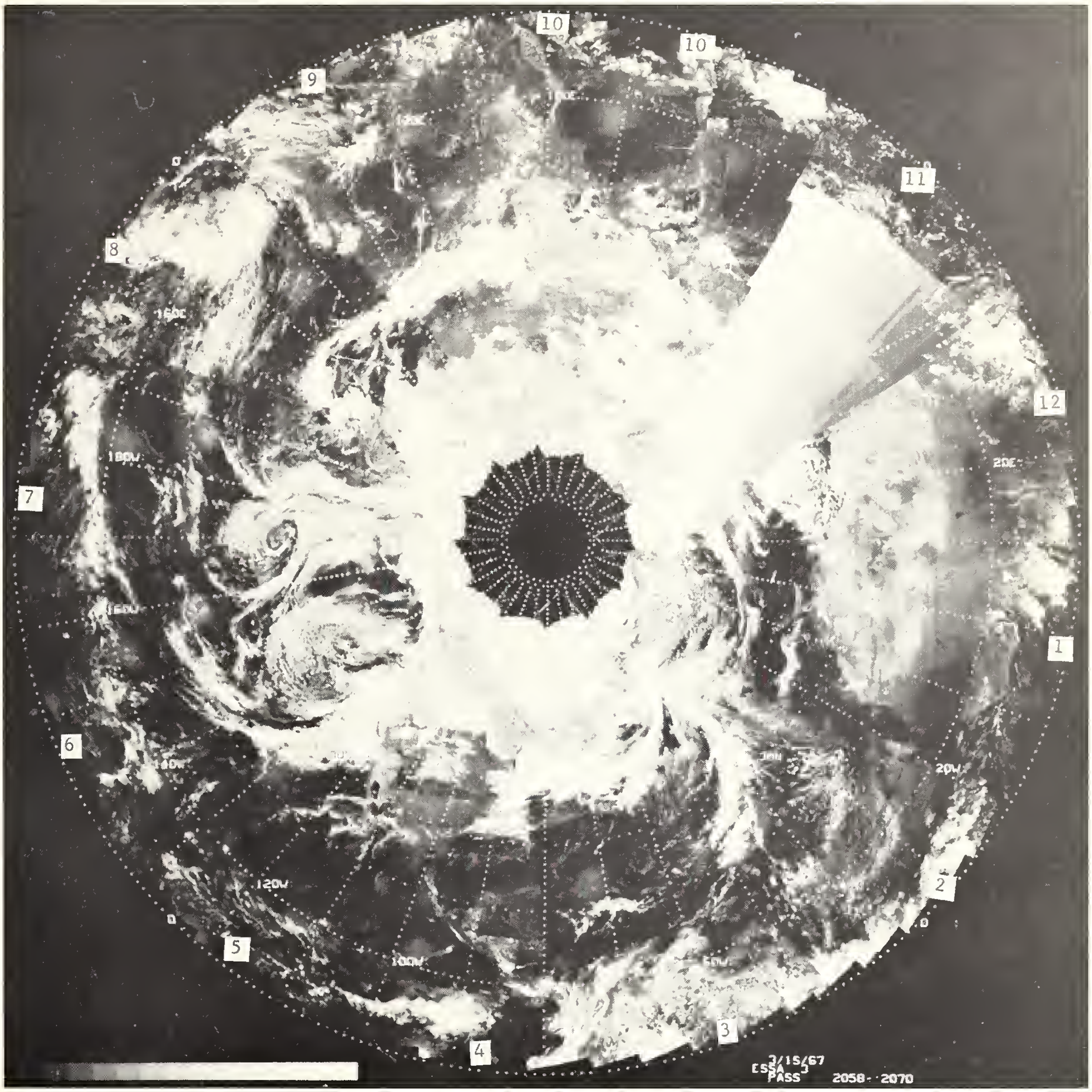
3/14/67
ESSA 3
PASS 2046- 2058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20E
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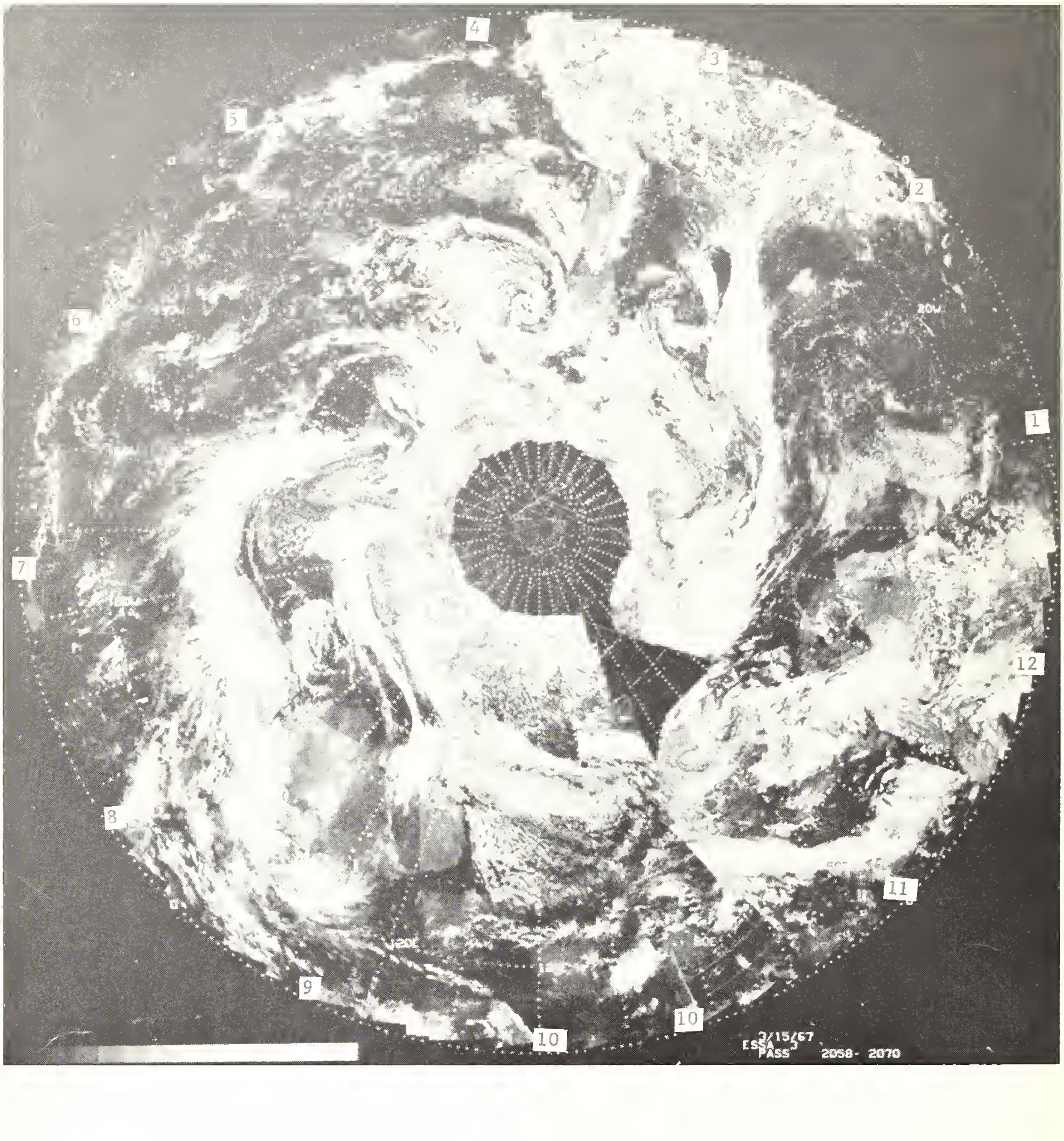
3/15/67
ESSA 3
PASS 2058 - 2070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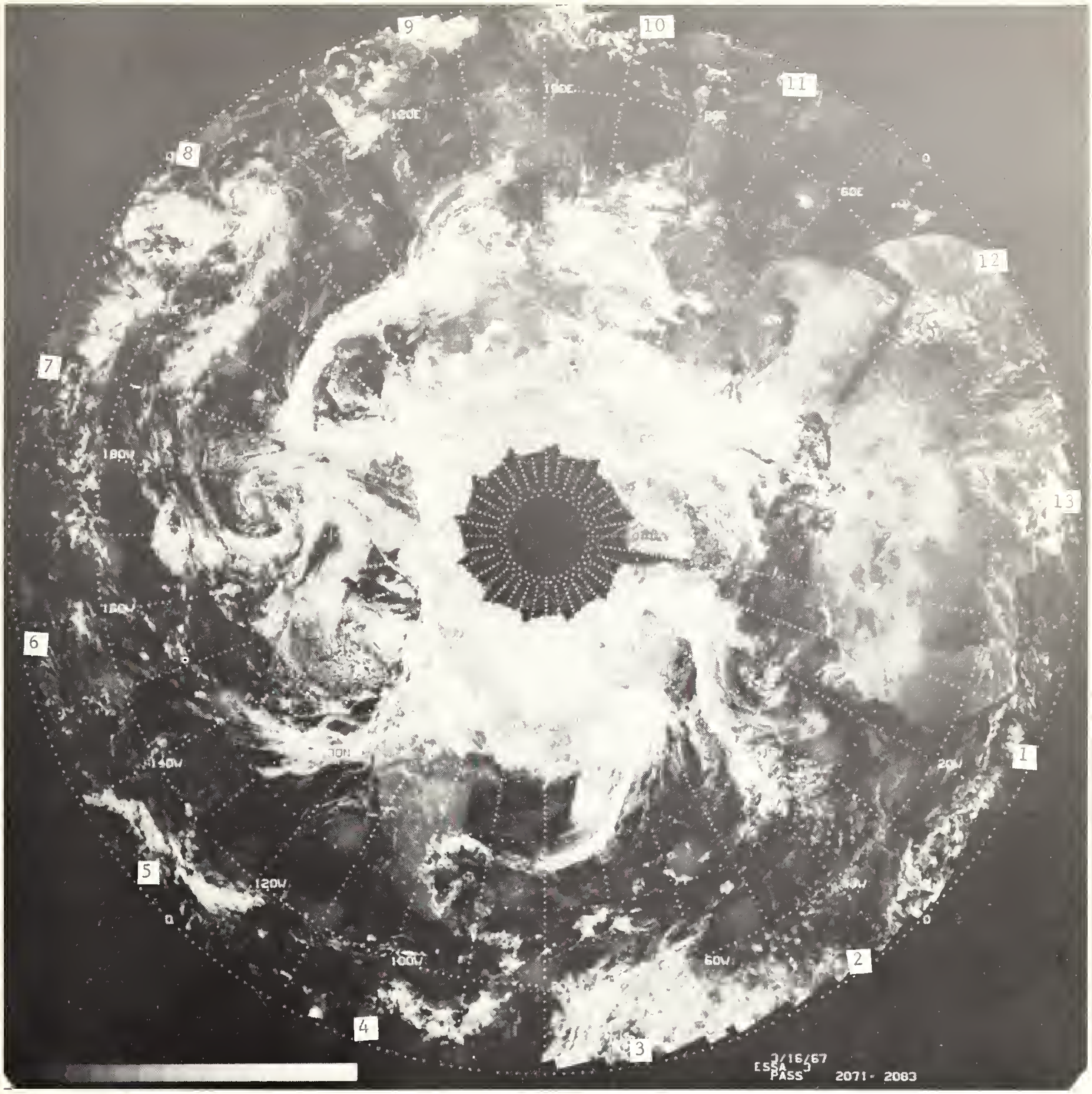
3/15/67
ESSA 3
PASS 2058- 2070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80E
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60E
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160W
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60W
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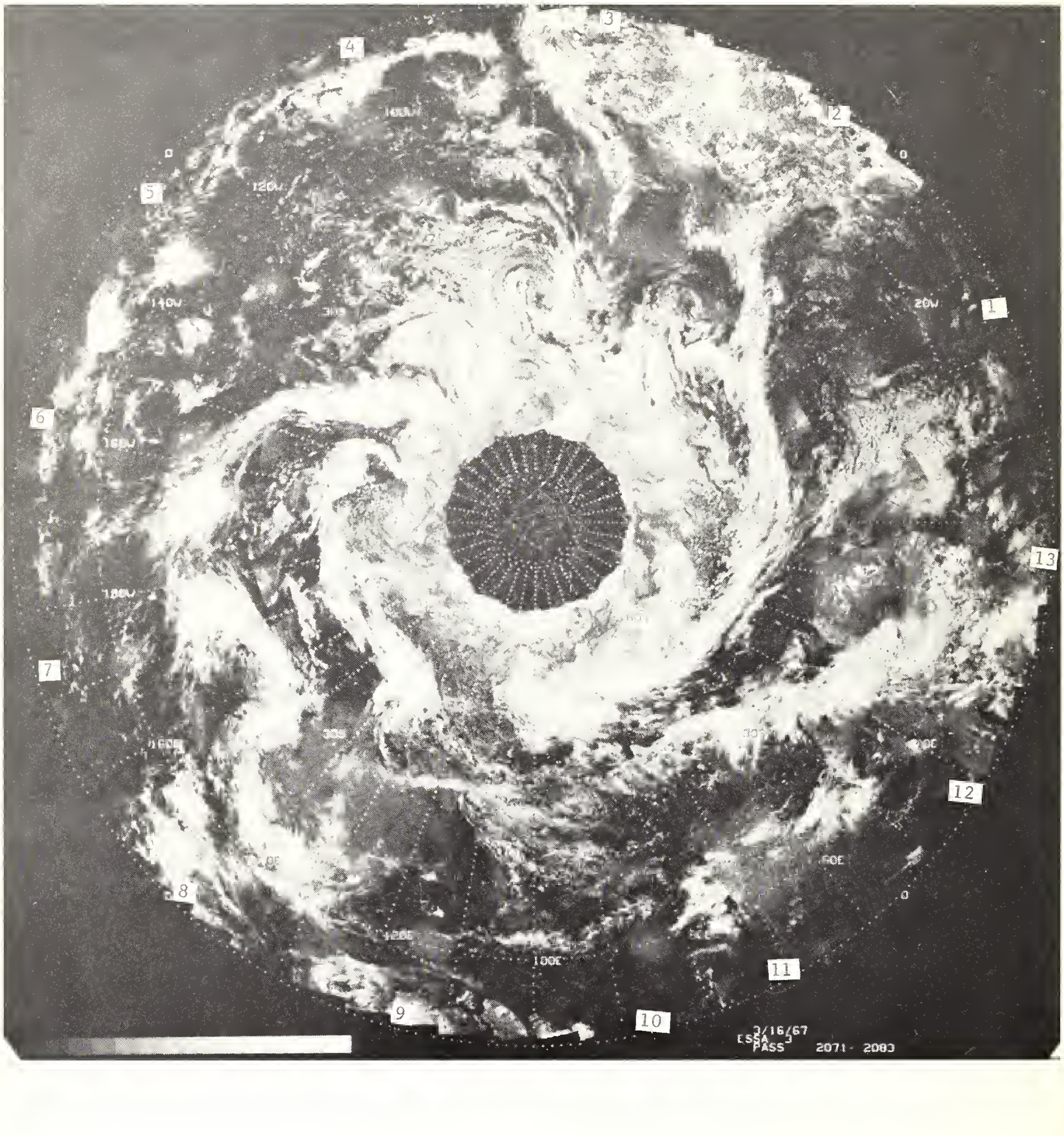
3/16/67
ESSA 3
PASS 2071- 2083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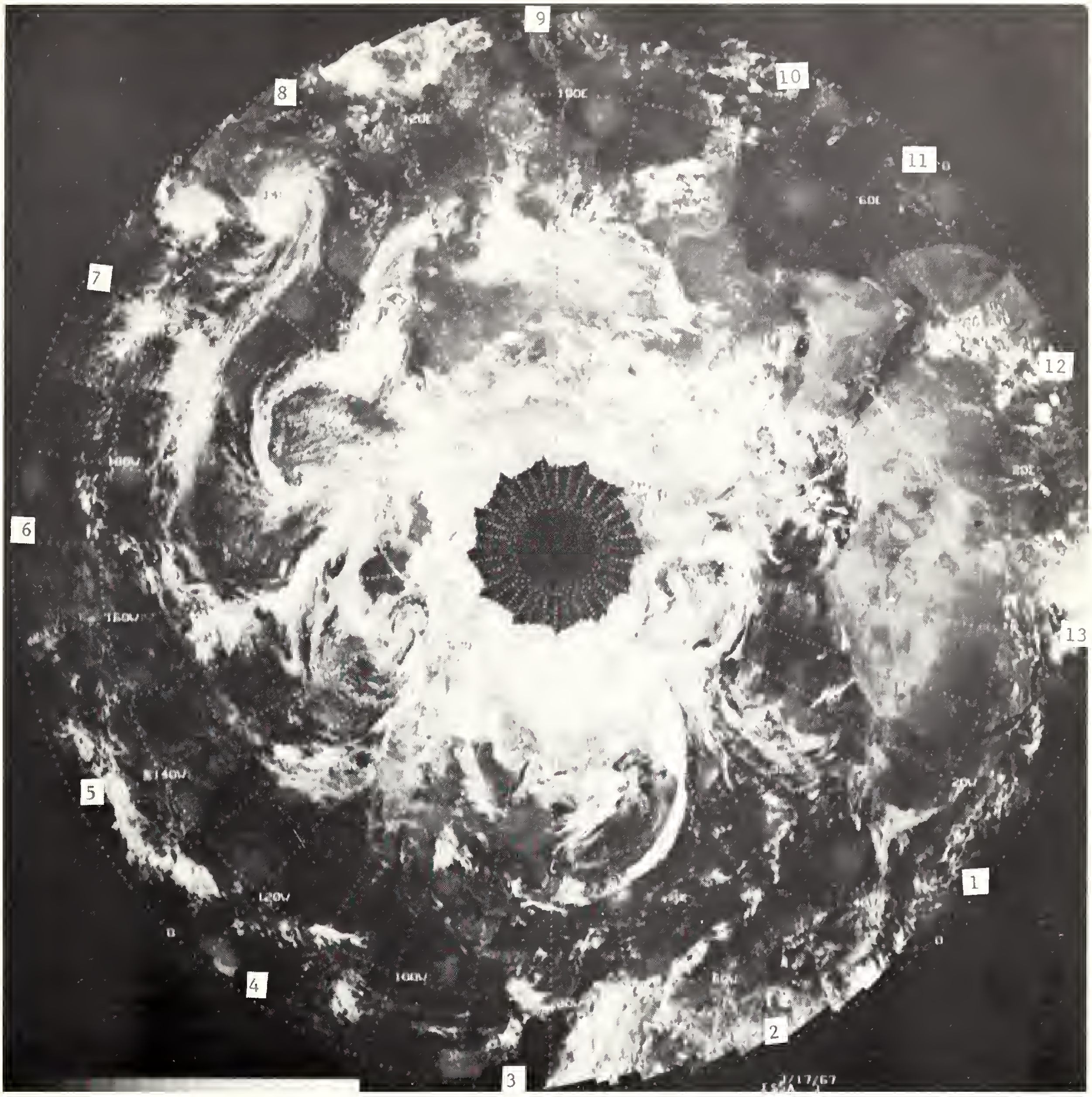
3/16/67
ESSA 3
PASS 2071 - 2083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120W
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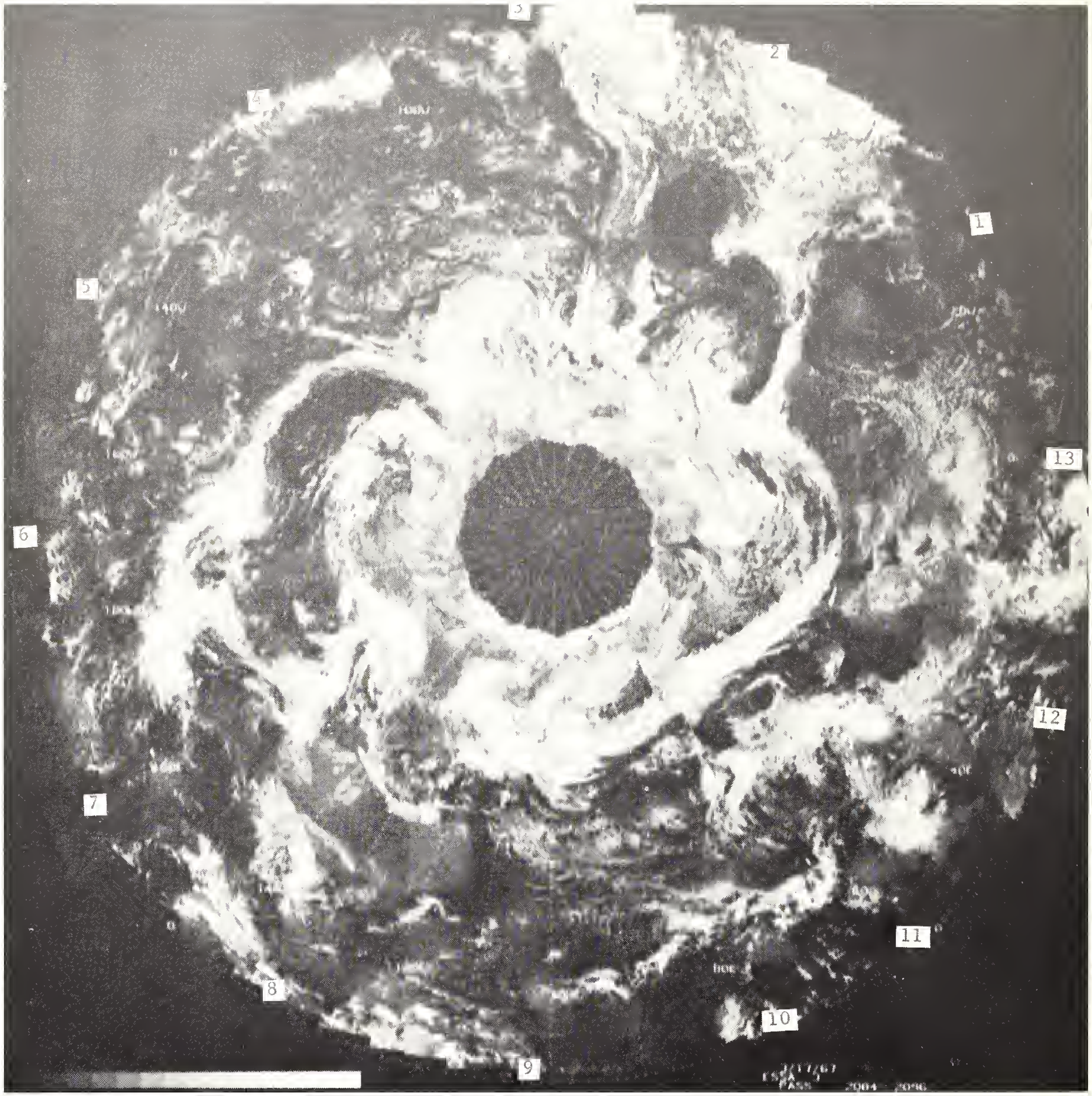
1/17/67
ESSA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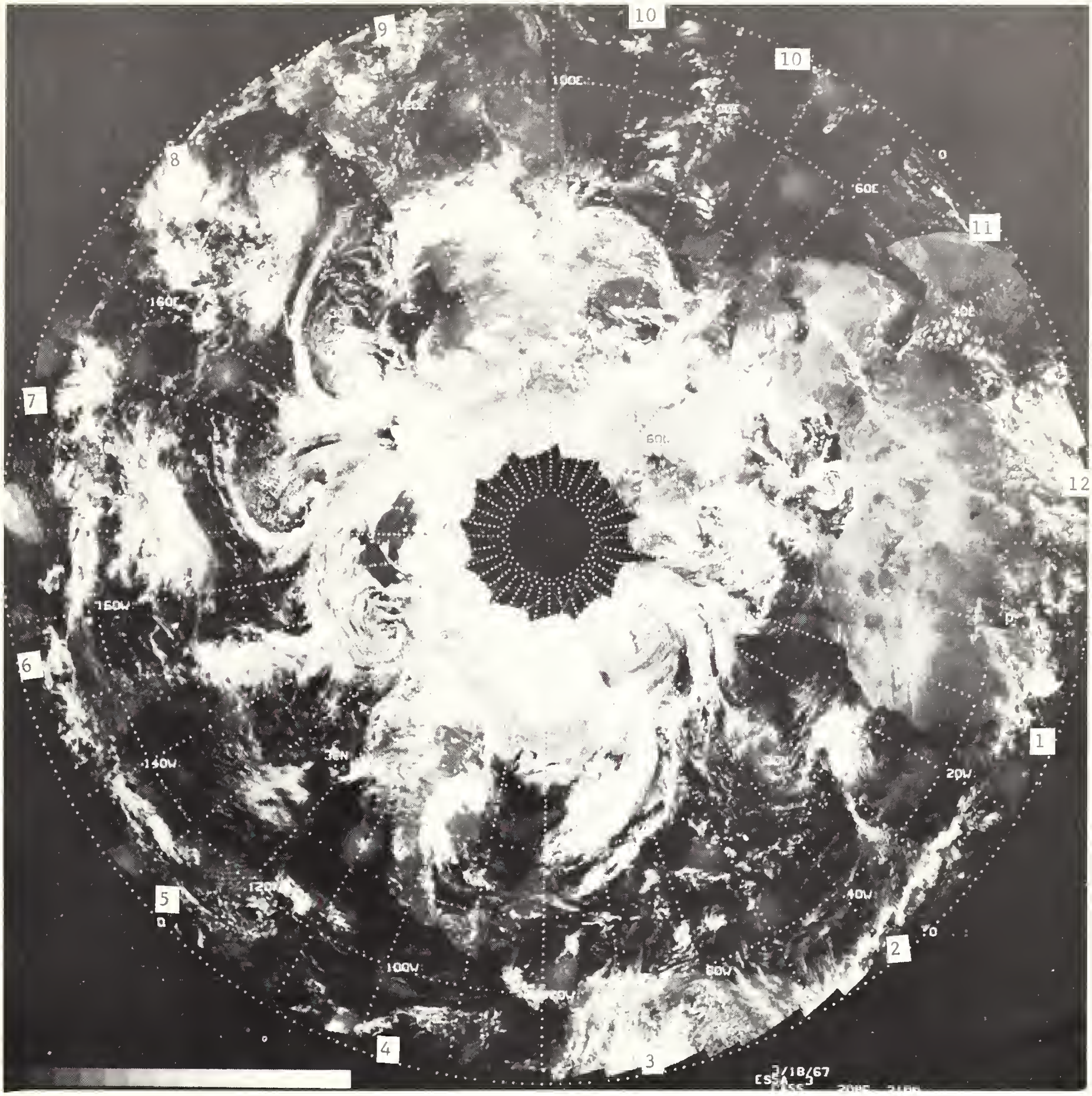
3/17/67
ESSA 3
PASS 2084 - 2096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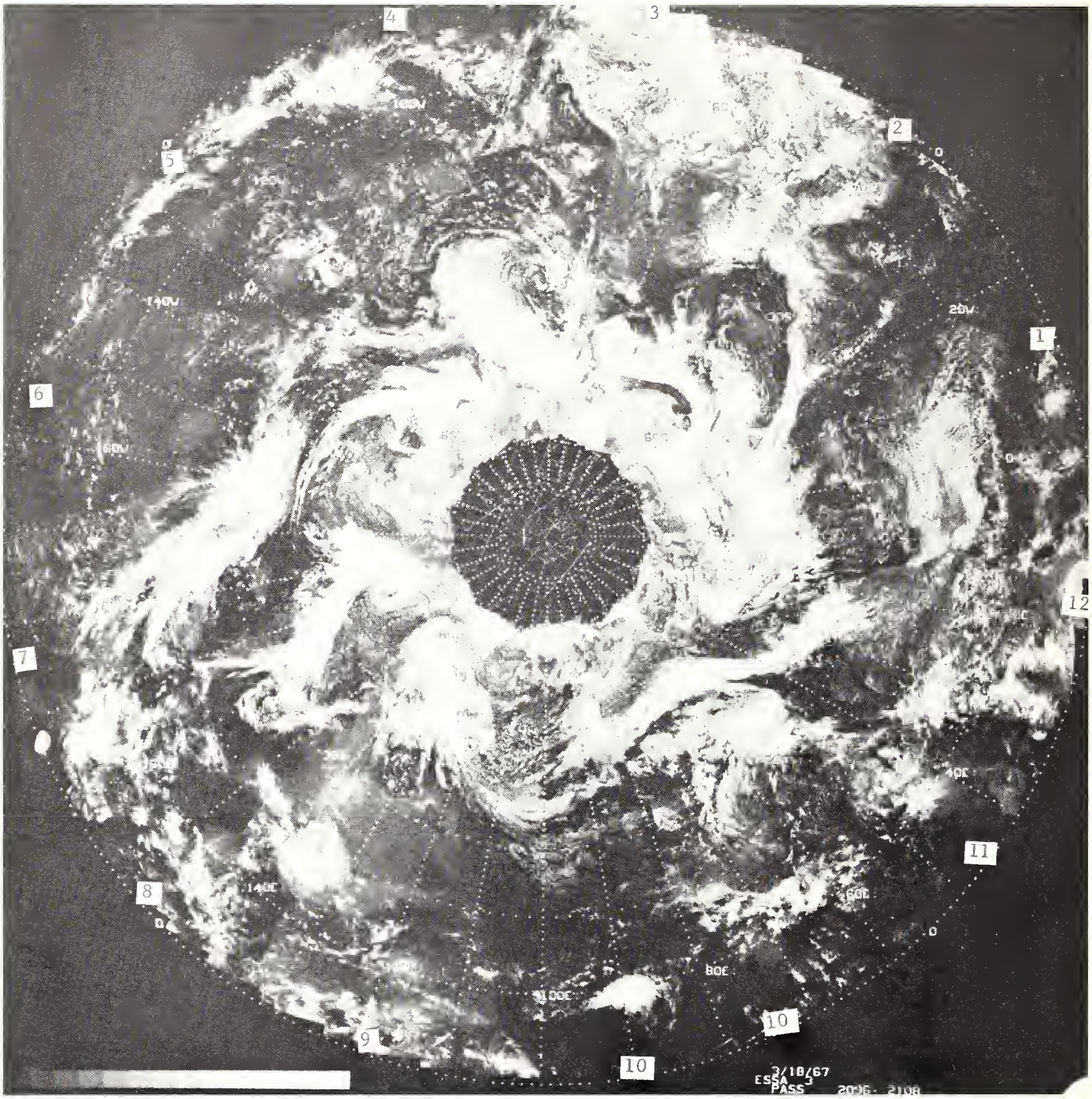
3/18/67
ESSA 3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140E
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100E
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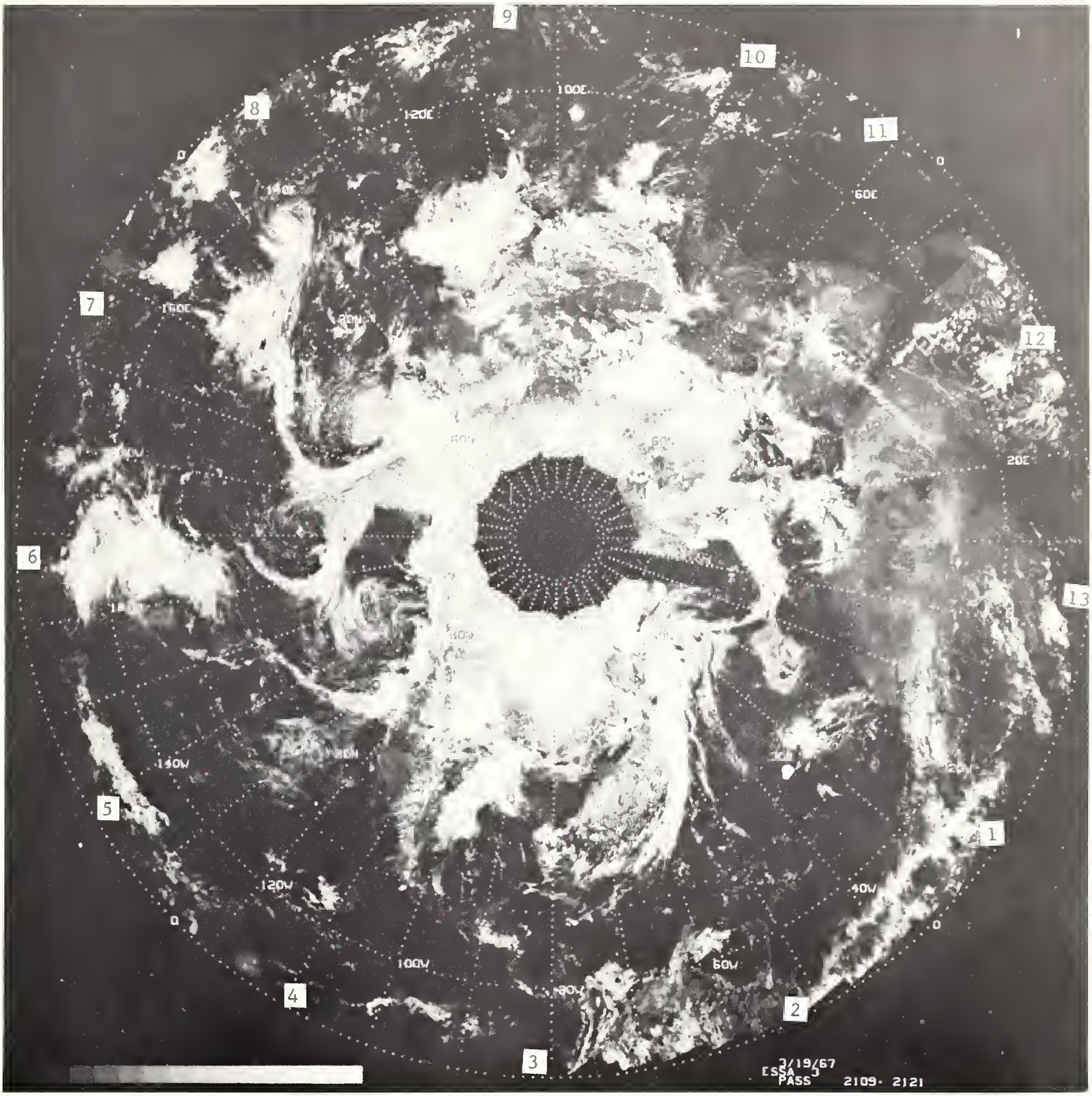
3/18/67
ESSA 3
PASS 2036- 2108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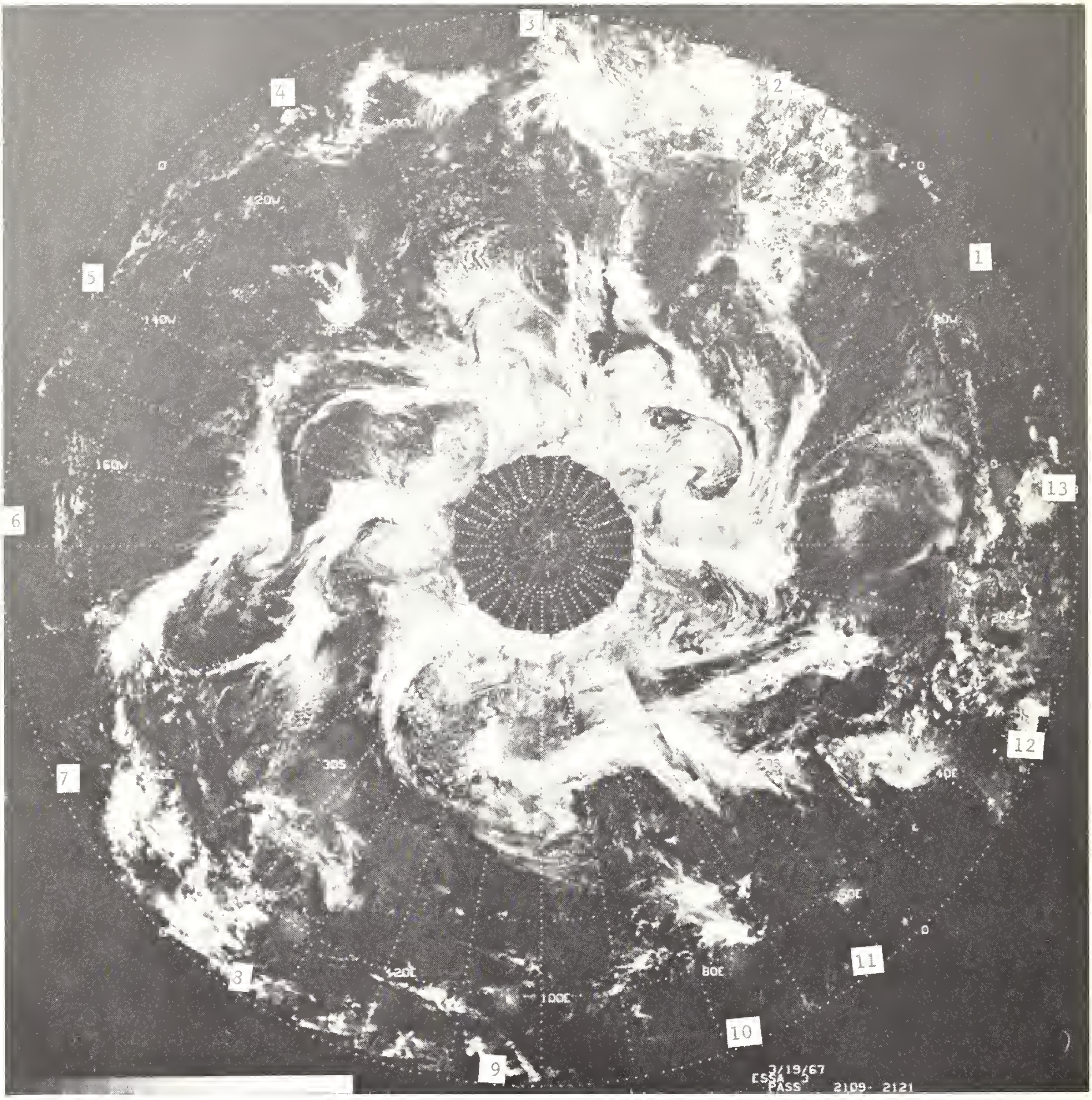
3/19/67
ESSA 3
PASS 2109- 2121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20S
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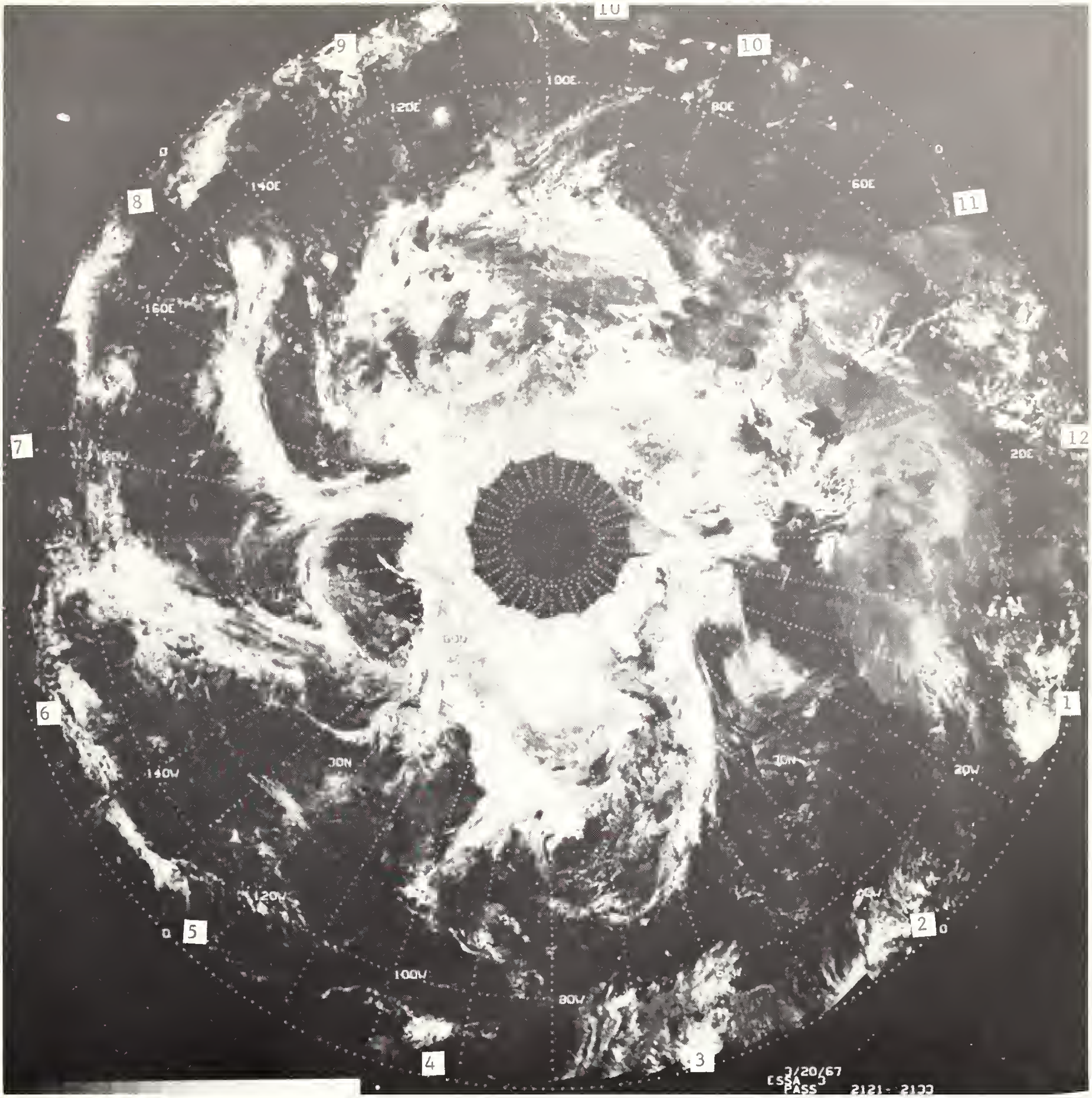
3/19/67
ESSA 3
PASS 2109- 2121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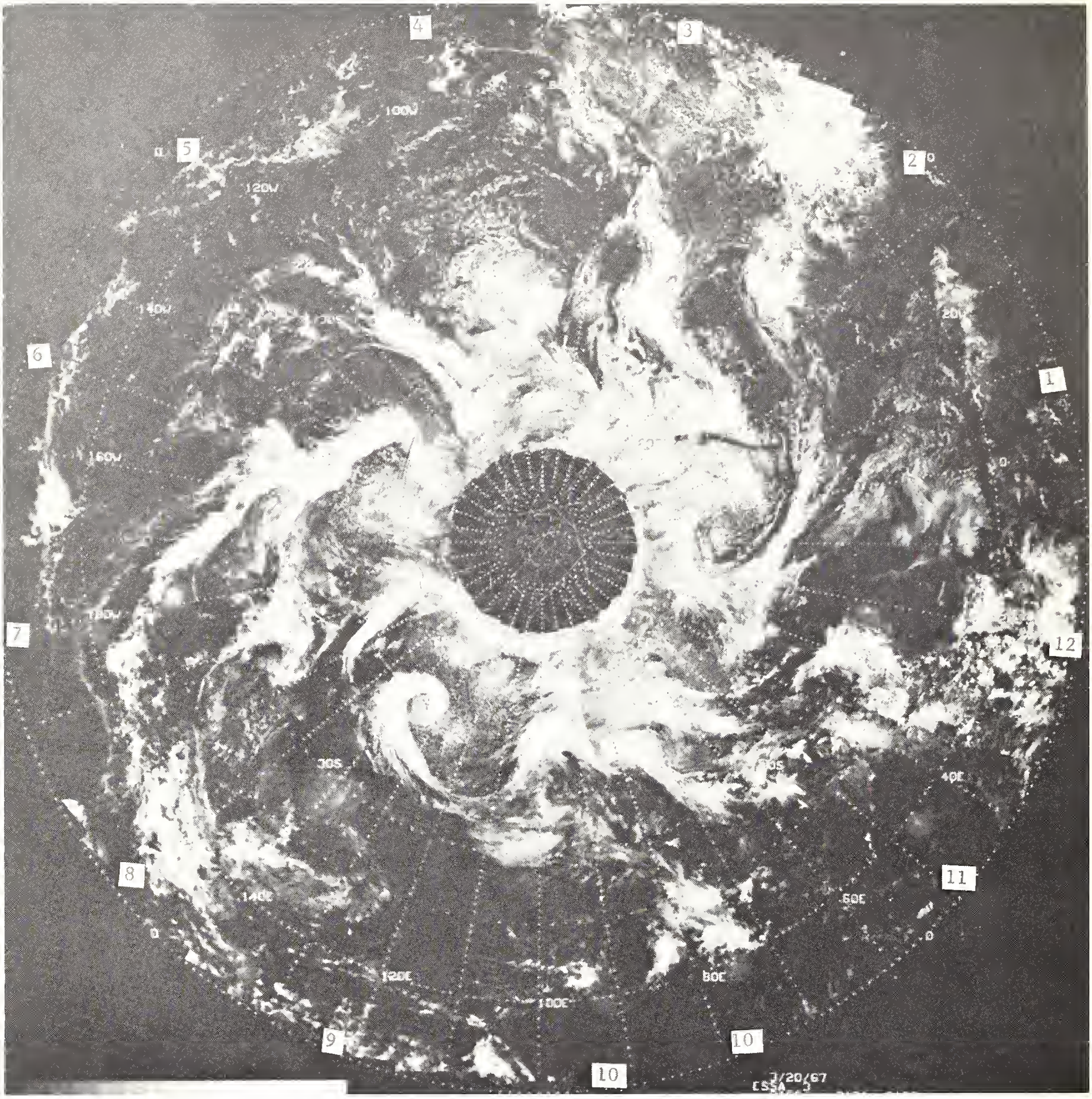
3/20/67
ESSA 3
PASS 2121 - 2133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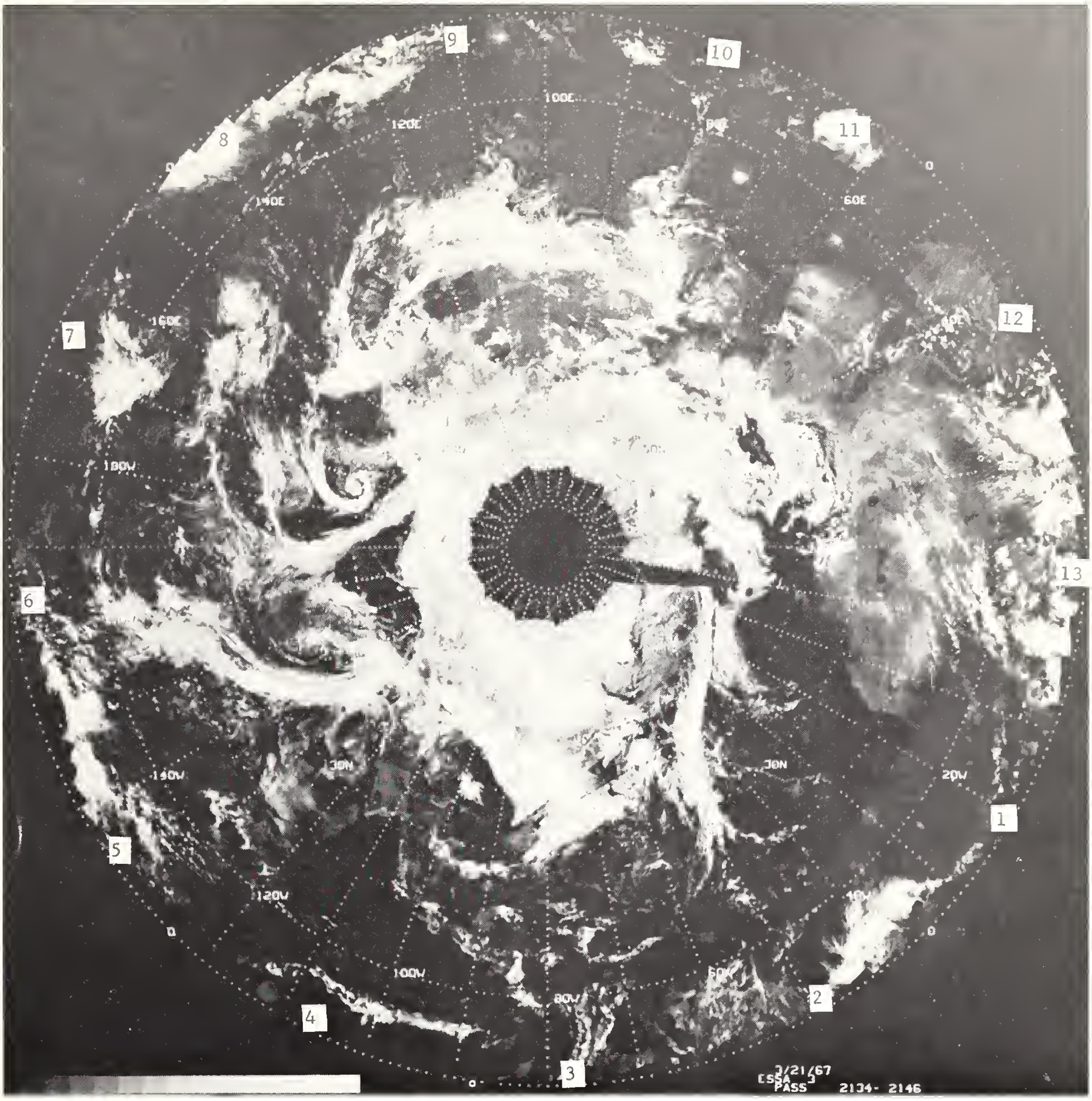
7/20/67
ESSA 3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20W
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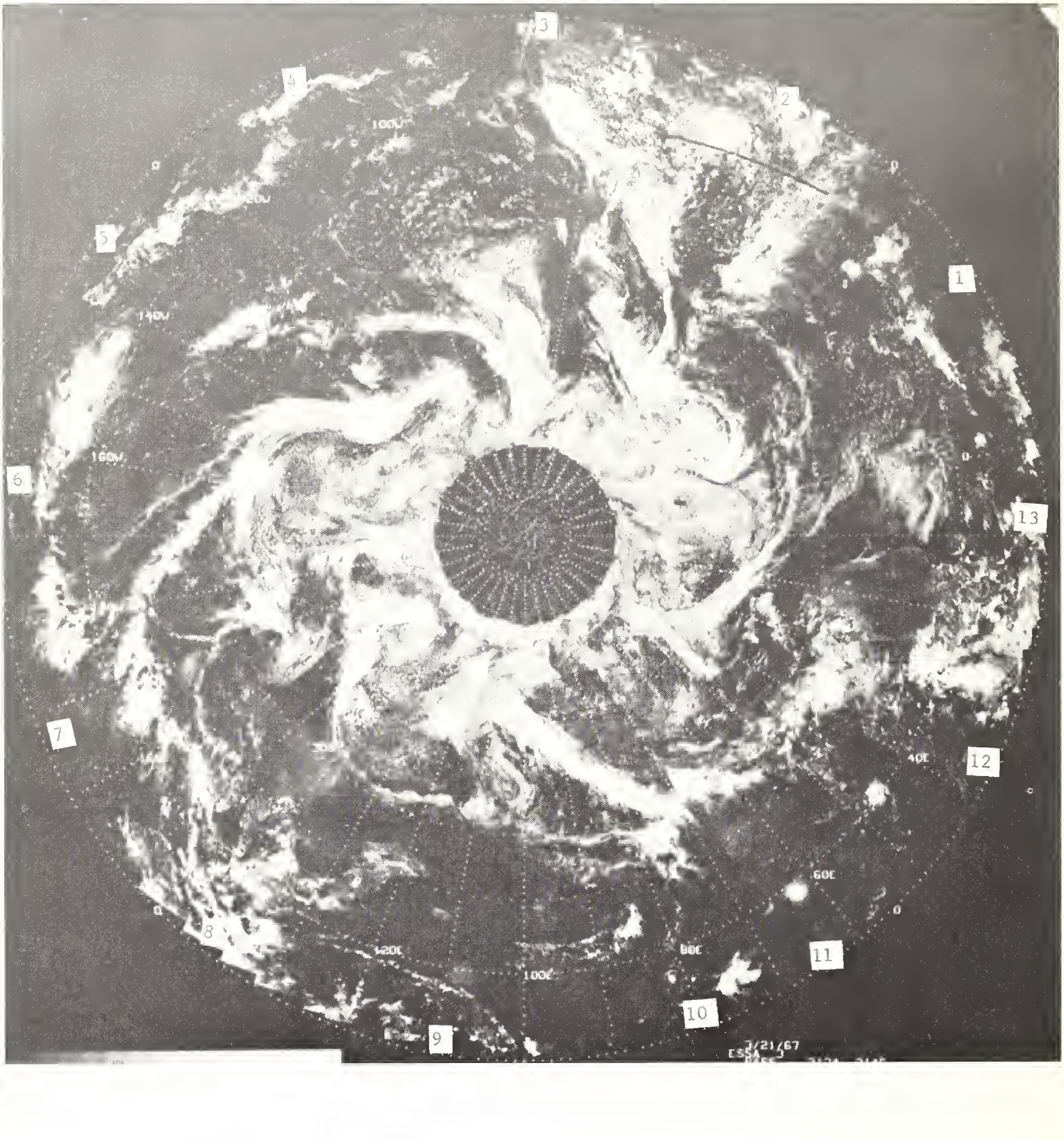
3/21/67
ESSA 3
PASS 2134- 2146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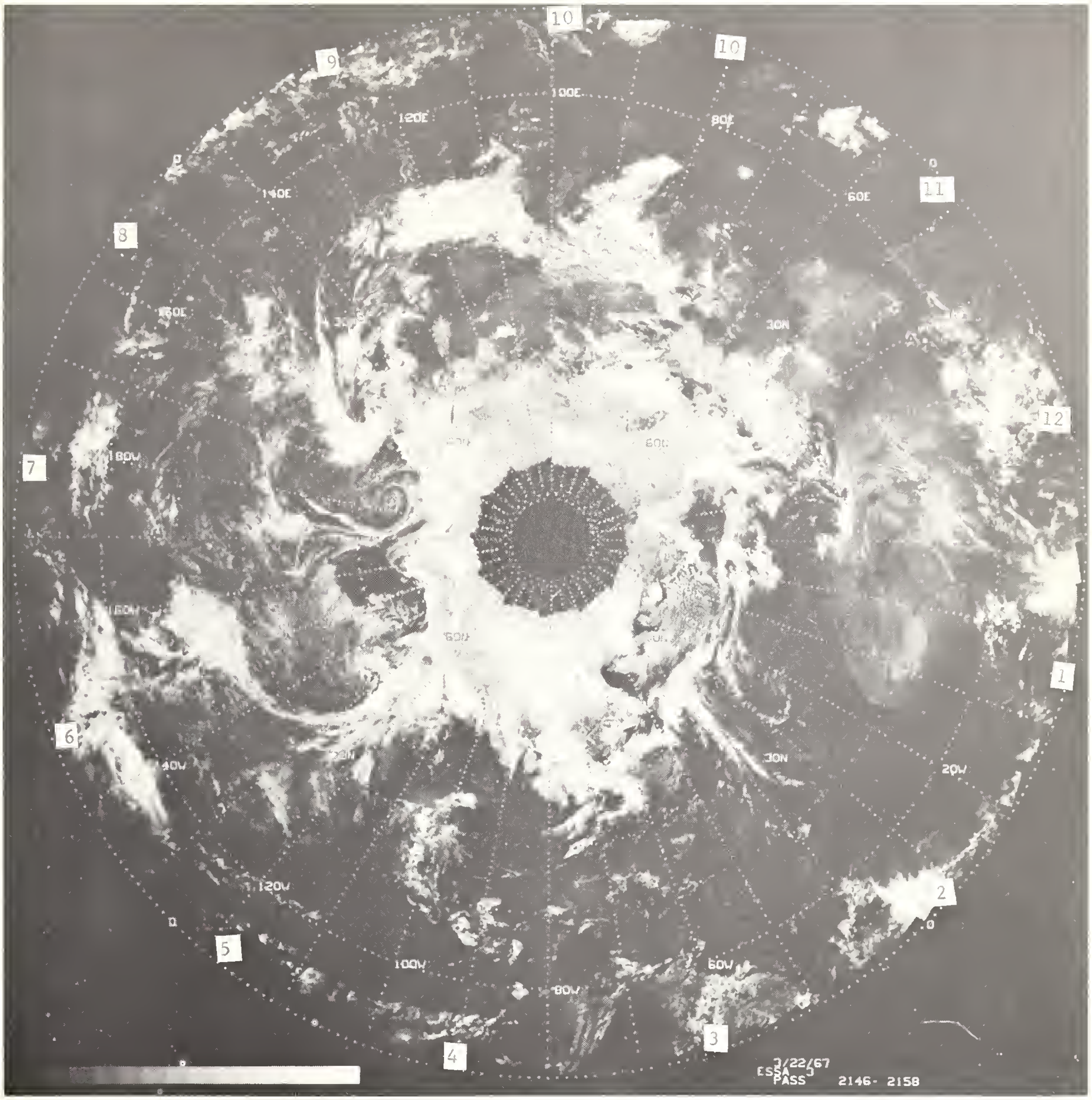
7/21/67
ESSA 3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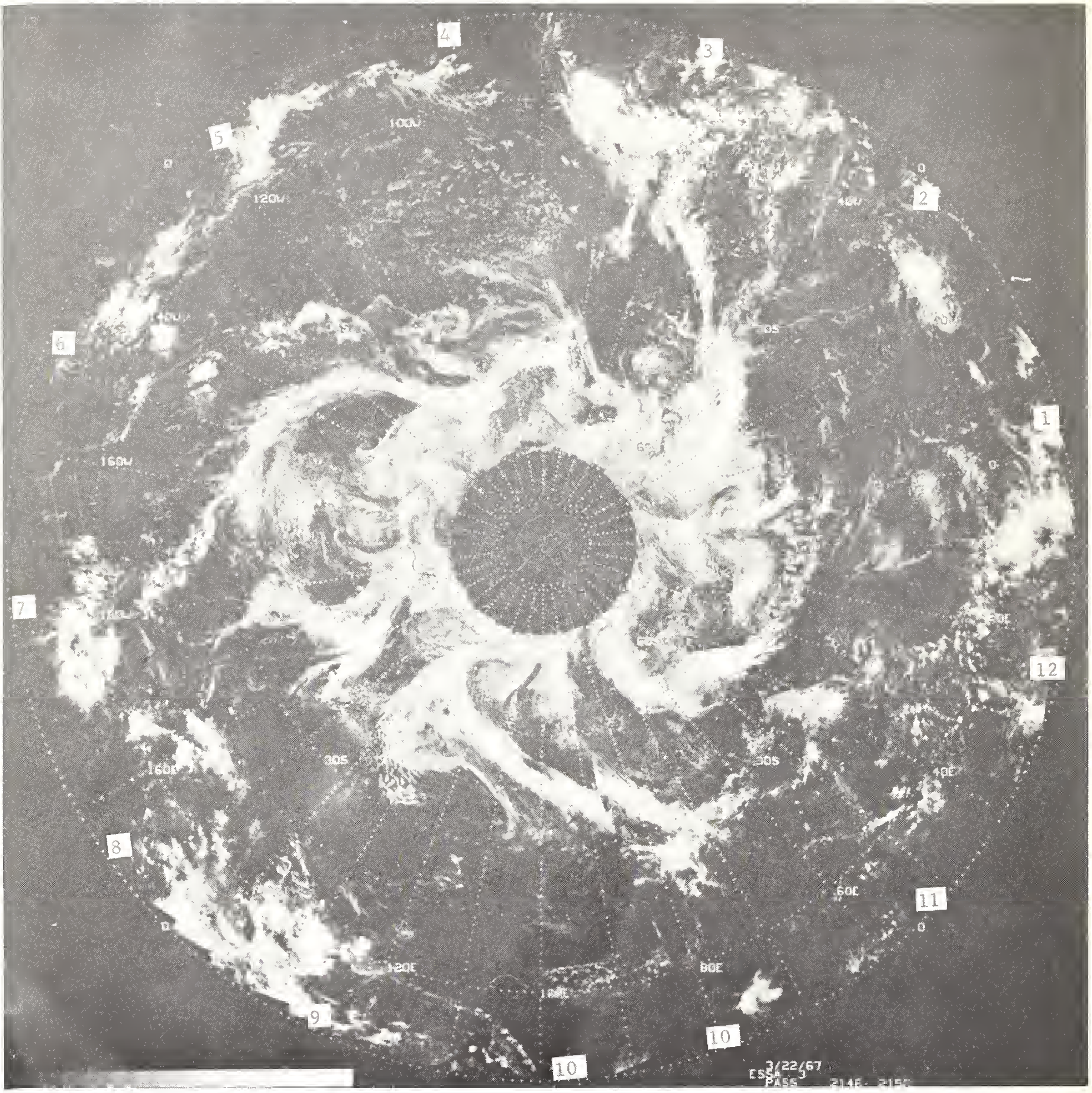
3/22/67
ESSA 3
PASS 2146- 2158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60E
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30S
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80E
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10
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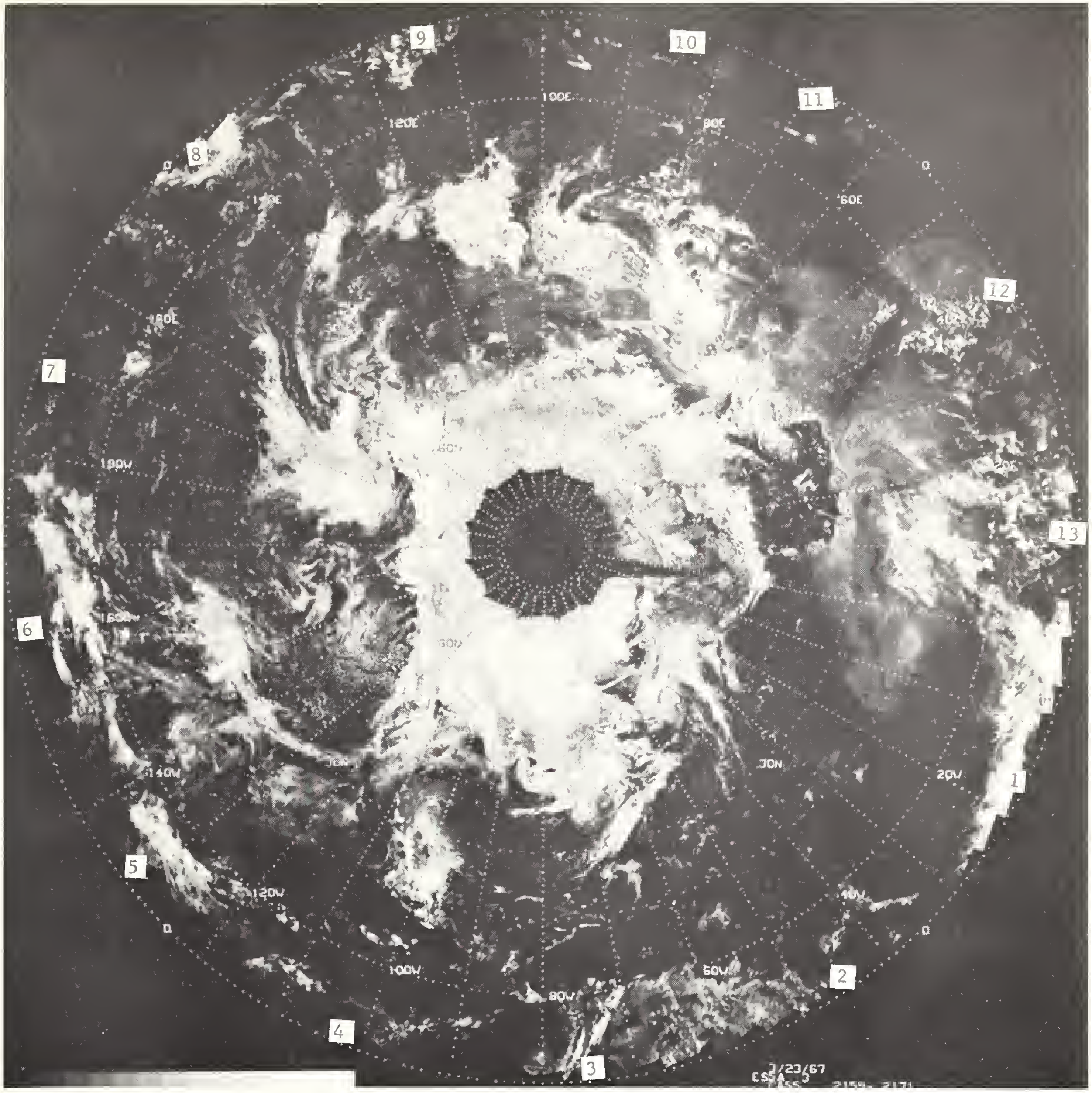
ESSA 3
PASS 2146- 2159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80E
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40E
180W
20E
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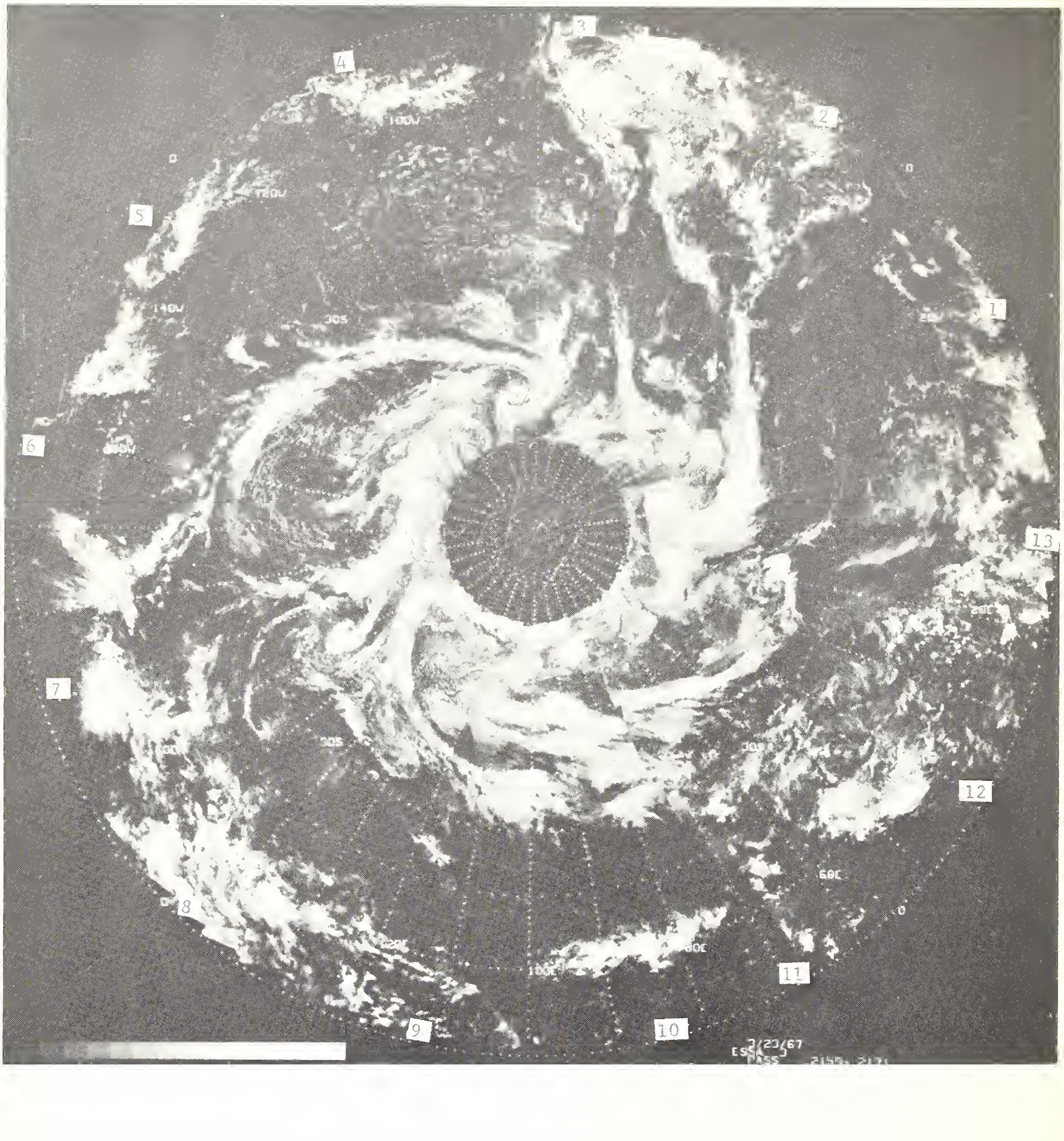
7/23/67
ESSA 3
PASS 2159- 2171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20E
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160W
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30S
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60E
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11
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100E
80E
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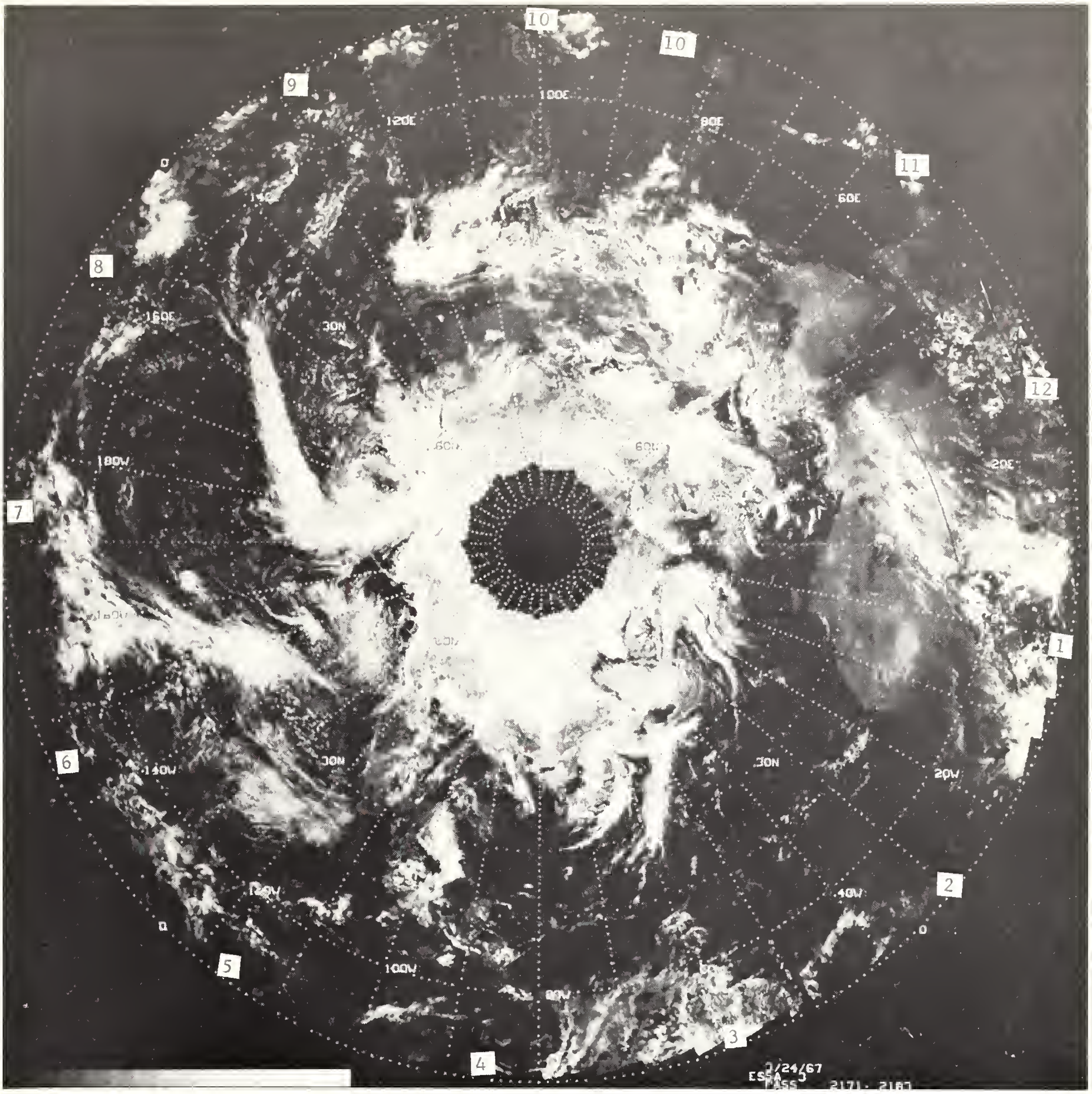
3/23/67
ESSA
PASS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160E
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40E
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60N
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20E
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160W
1
6
140W
30N
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80W
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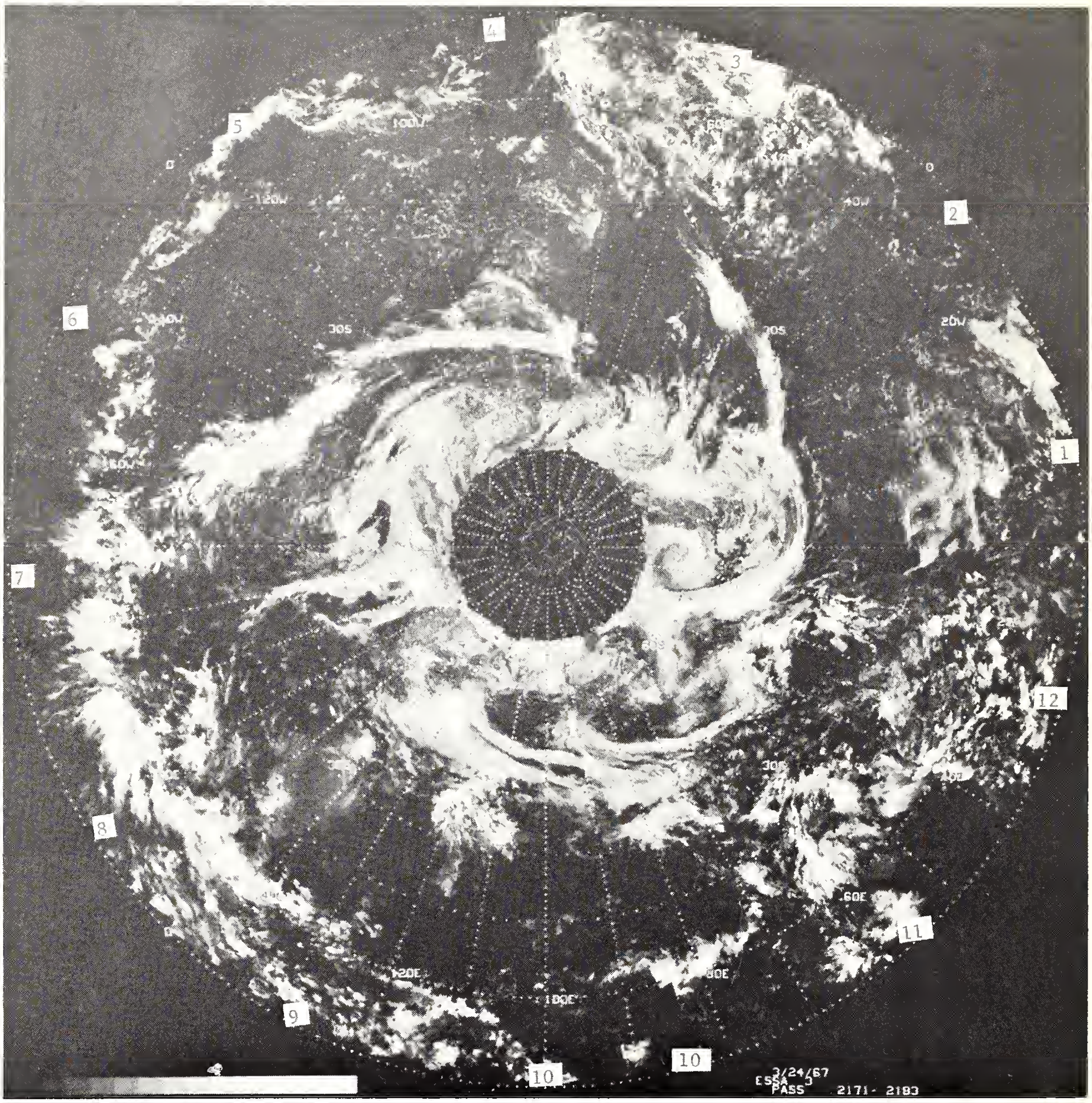
4
3/24/67
ESSA 3
PASS 2171 - 2187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140W
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20W
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160W
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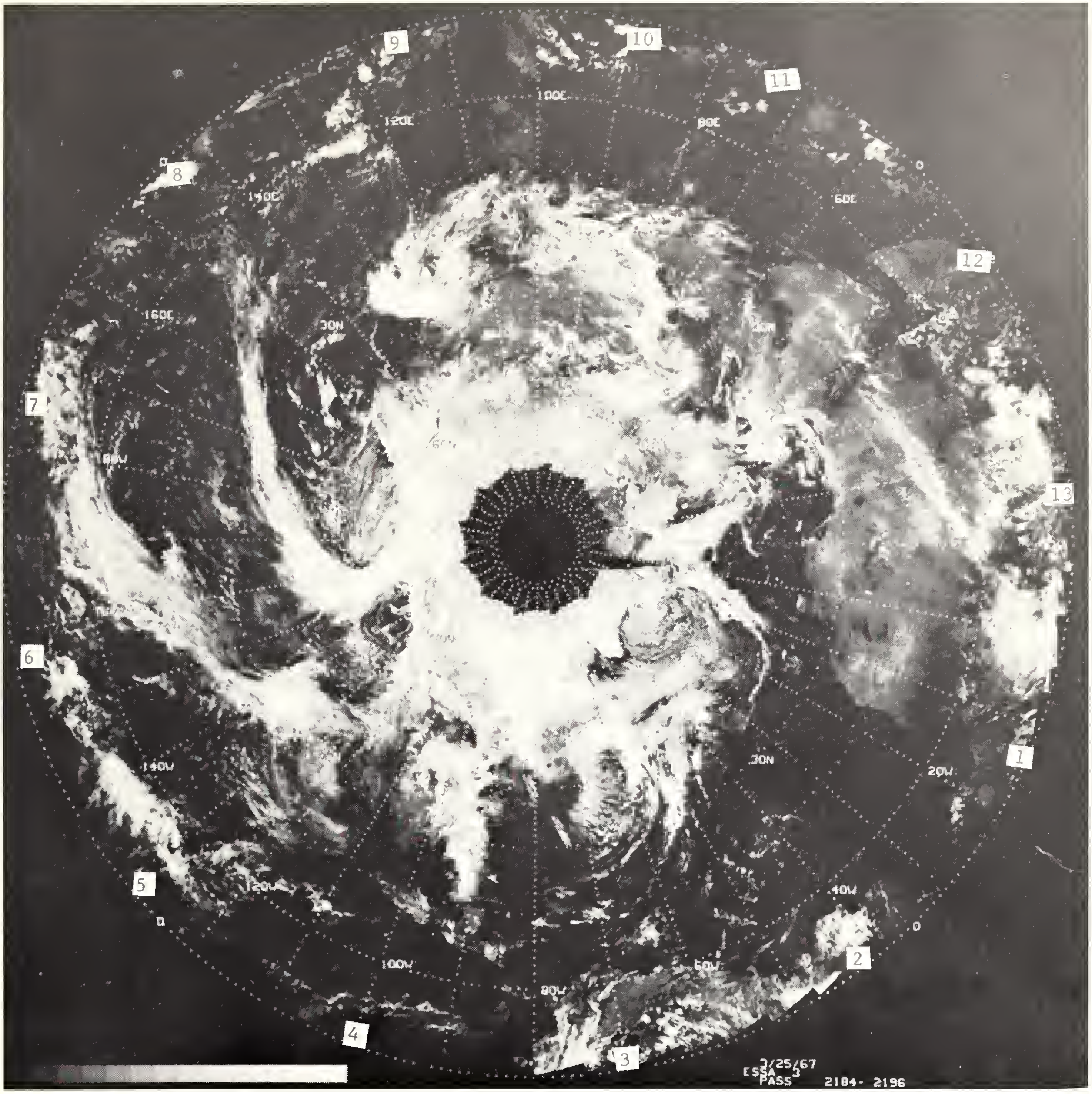
10
3/24/67
ESSA 3
PASS 2171- 2183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160W
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140W
30N
20W
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60W
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80W
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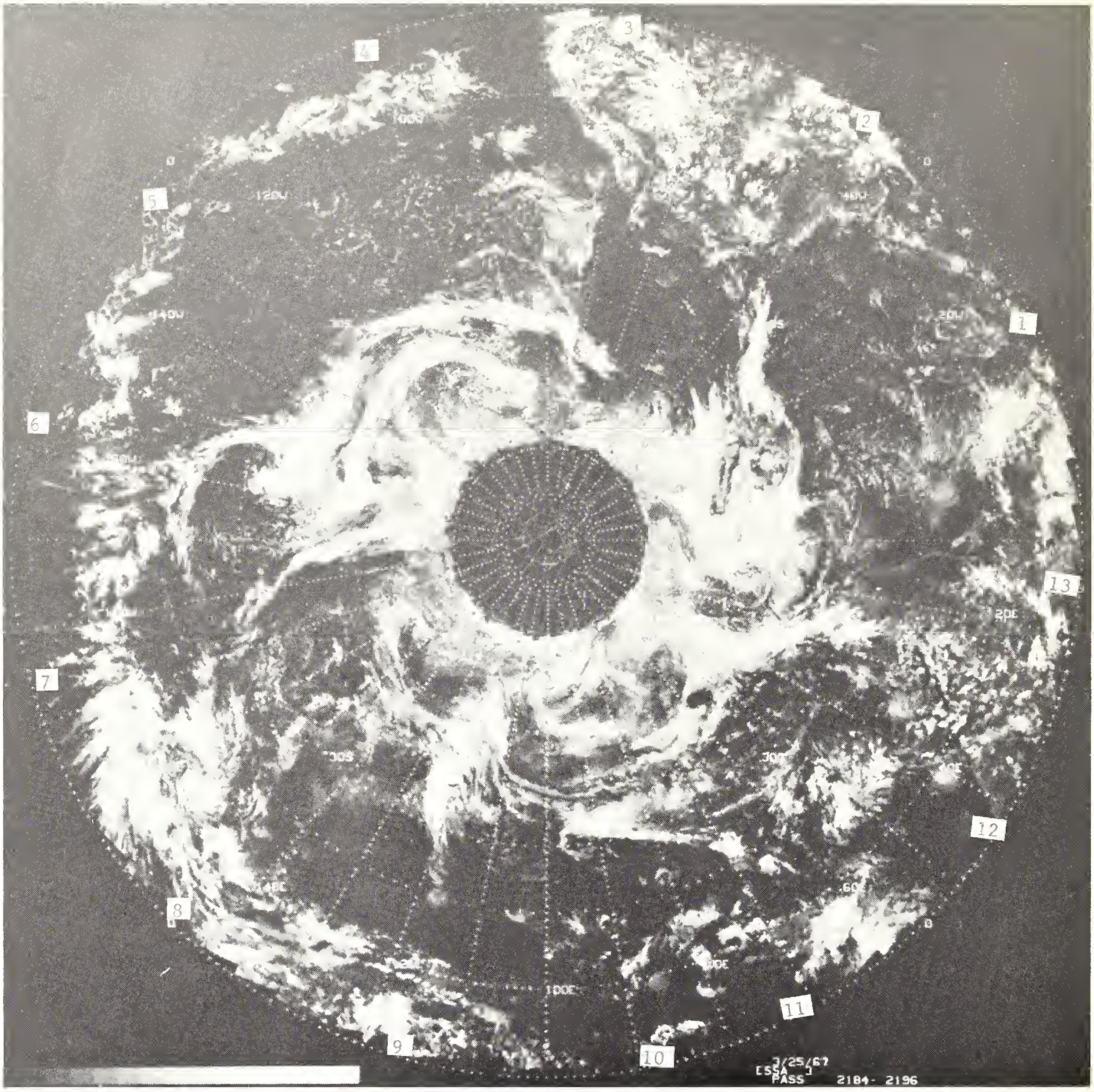
3/25/67
ESSA 3
PASS
2184- 2196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30S
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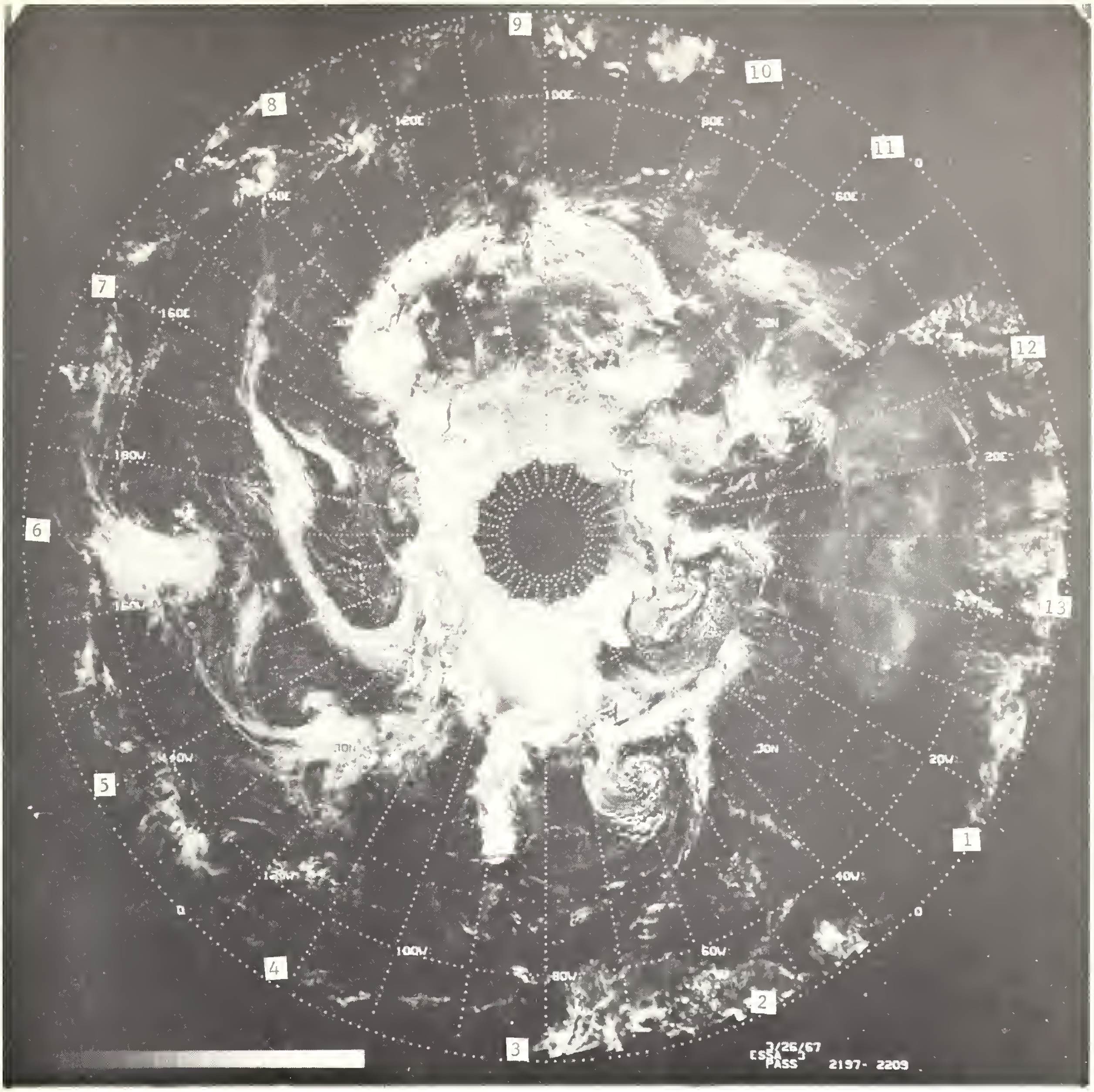
3/25/67
ESSA
PASS 2184- 2196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60W
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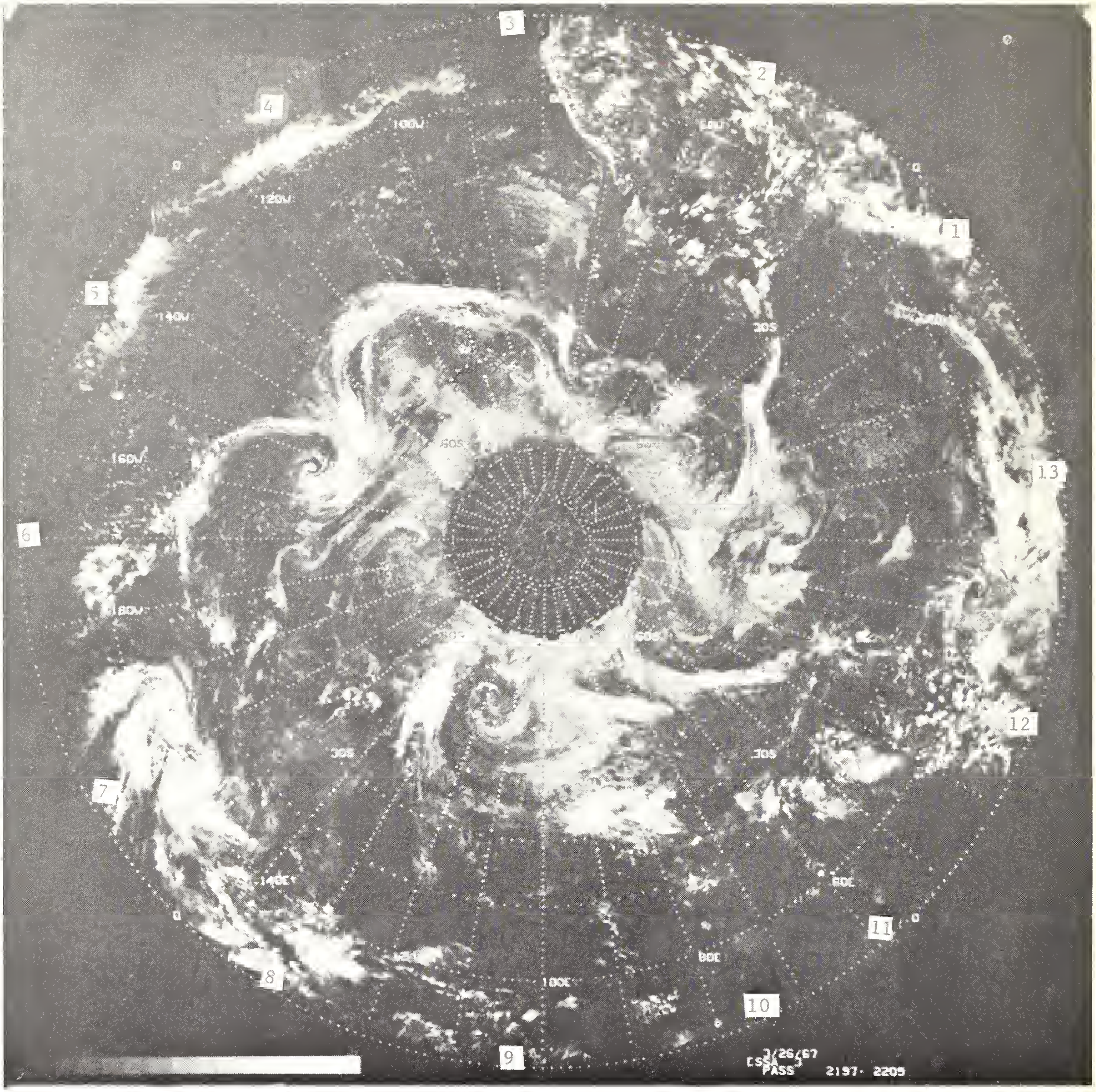
3/26/67
ESSA 3
PASS 2197- 2209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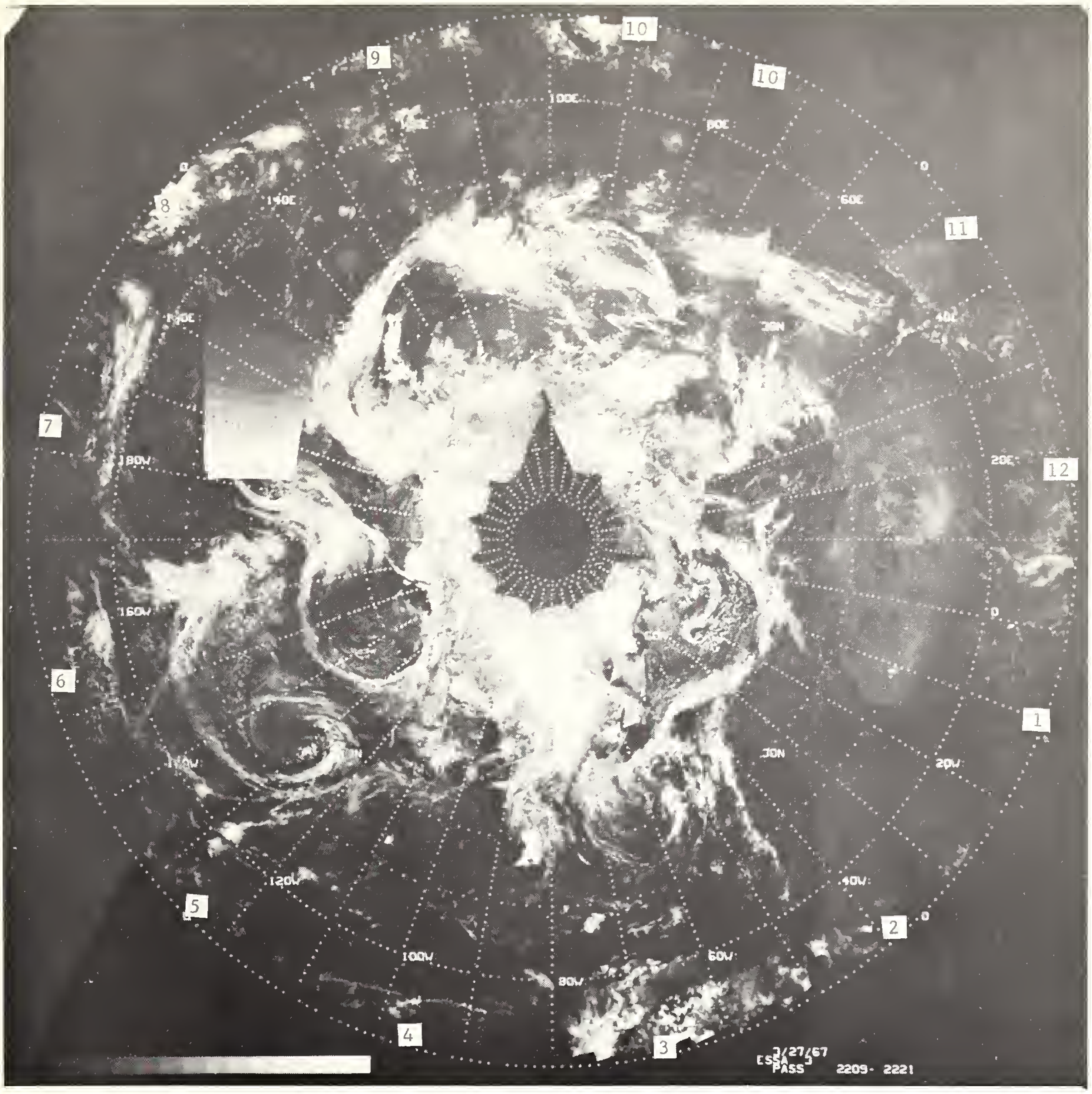
3/26/67
ESSA
PASS 2197- 2209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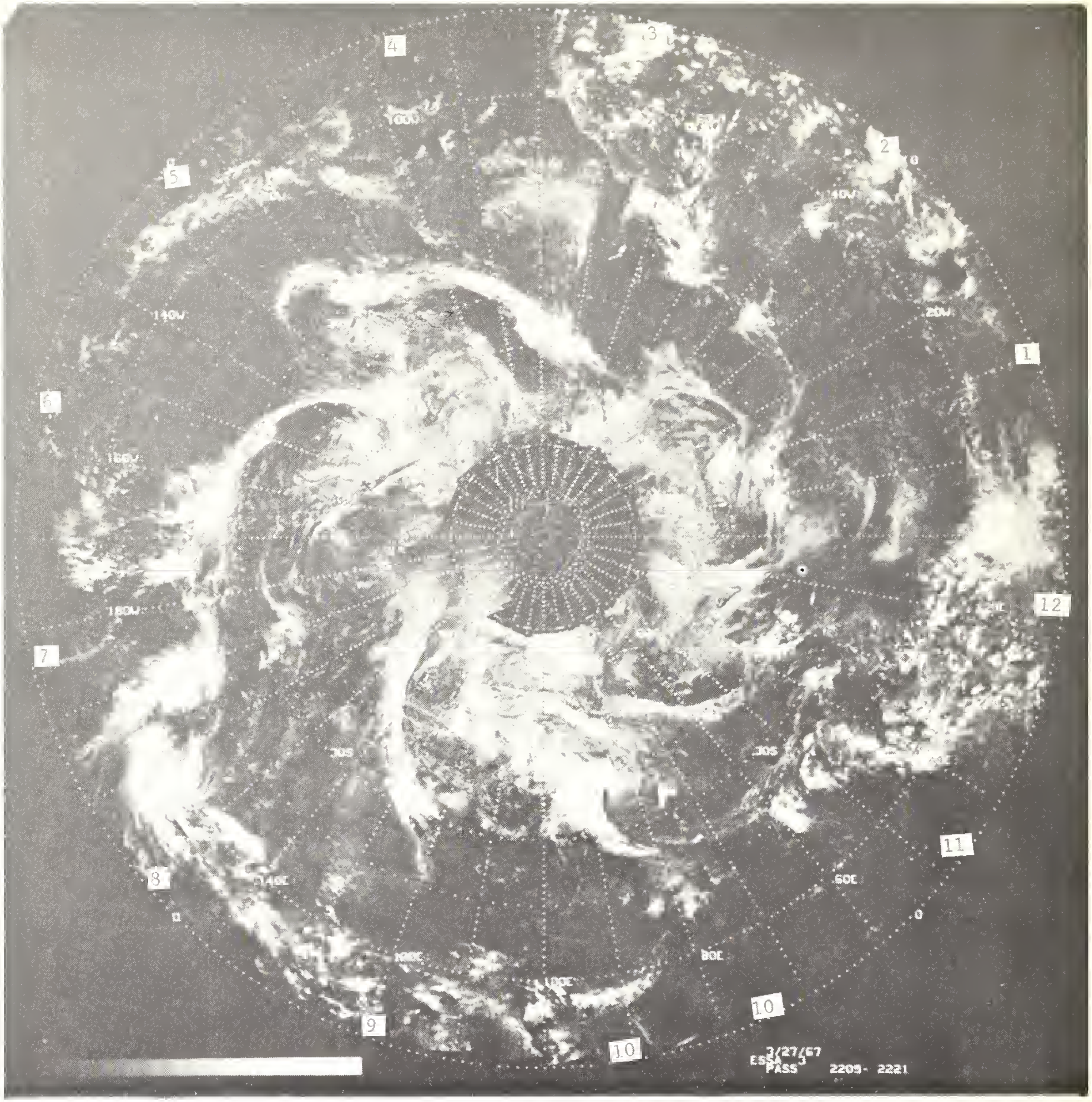
3/27/67
ESSA 3
PASS 2209- 2221



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30S
3/27/67
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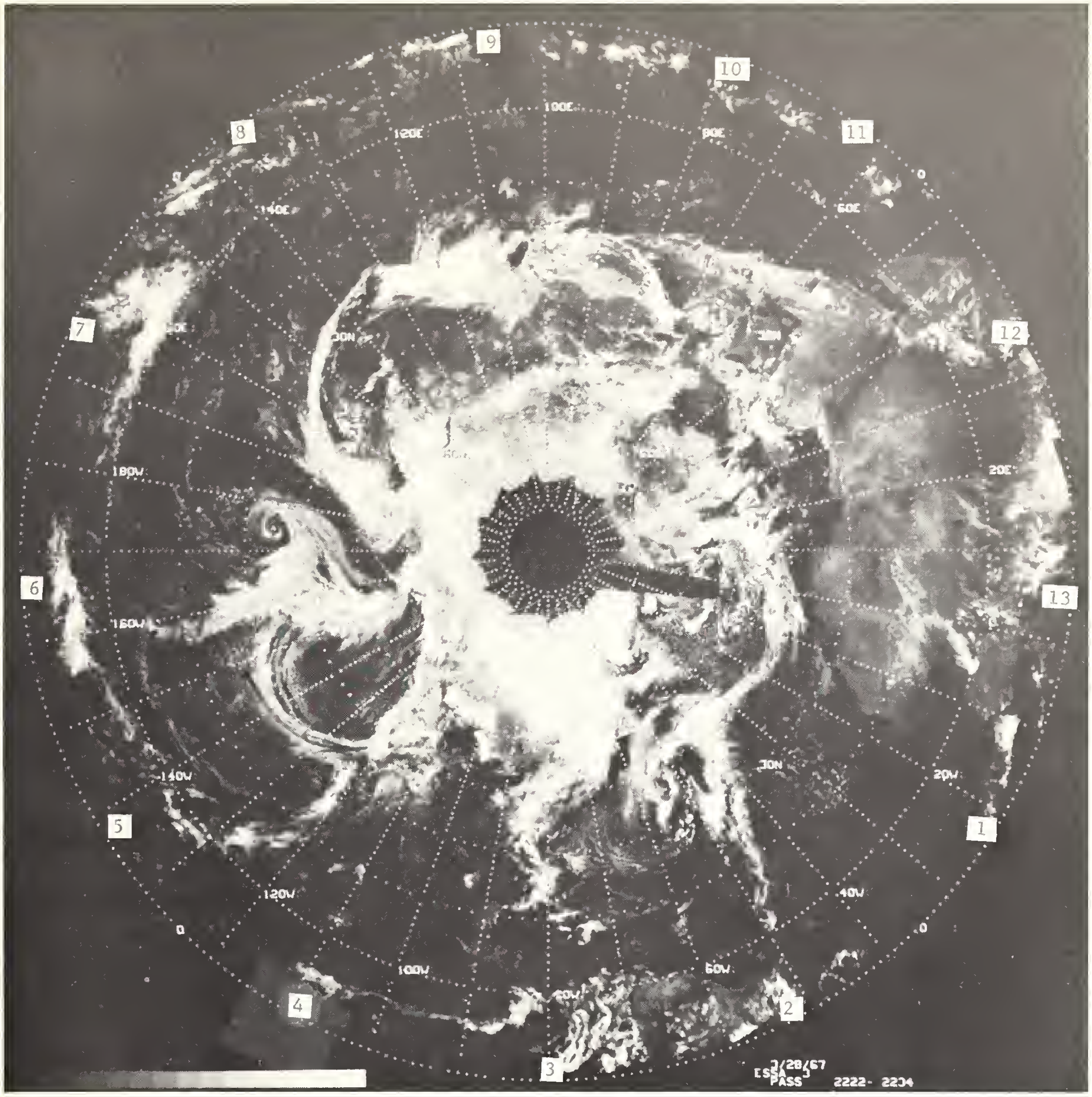
PASS 2209- 2221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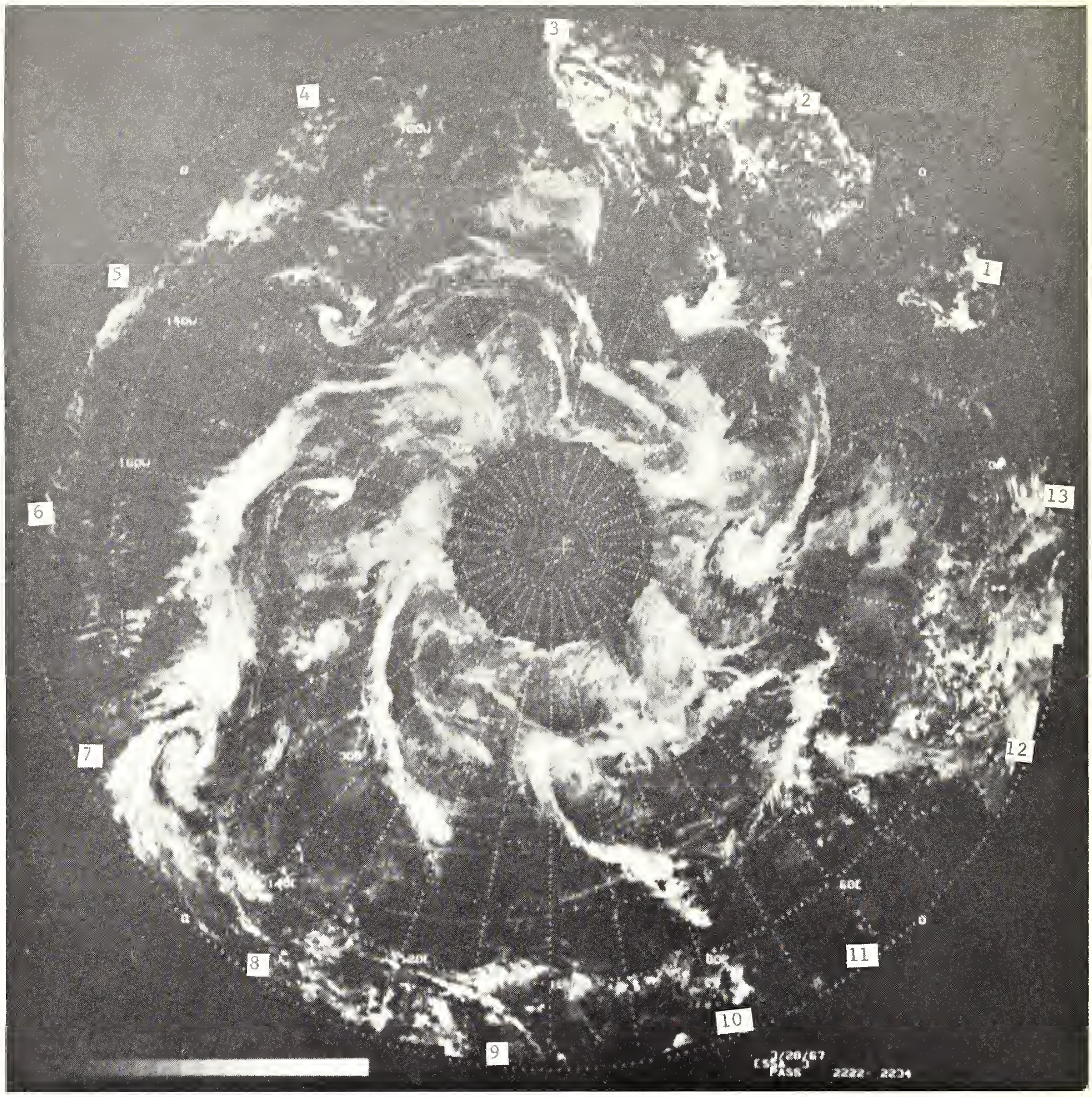
3/28/67
ESSA 3
PASS 2222- 2234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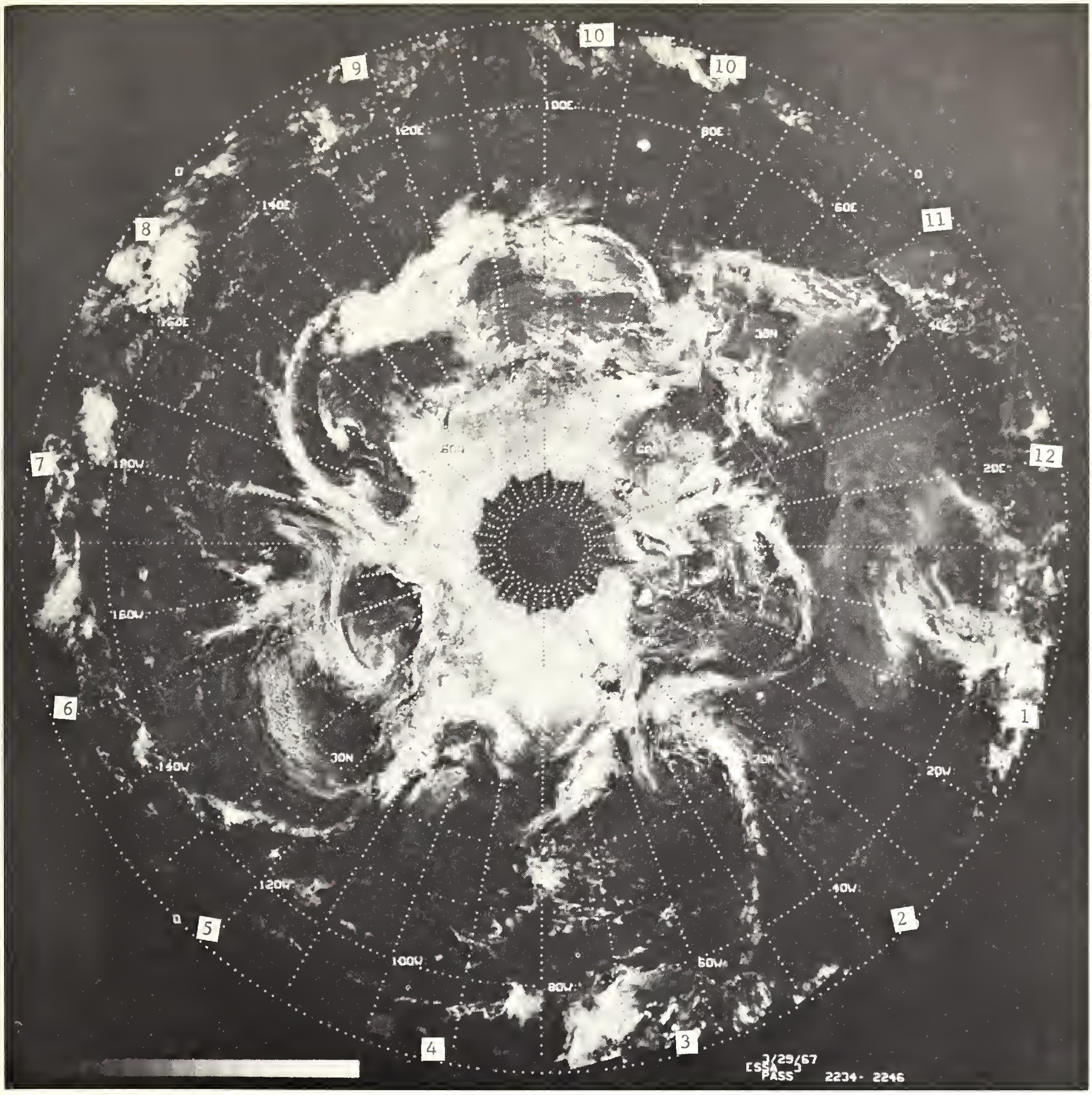
3/20/67
ESSA 3
PASS 2222- 2234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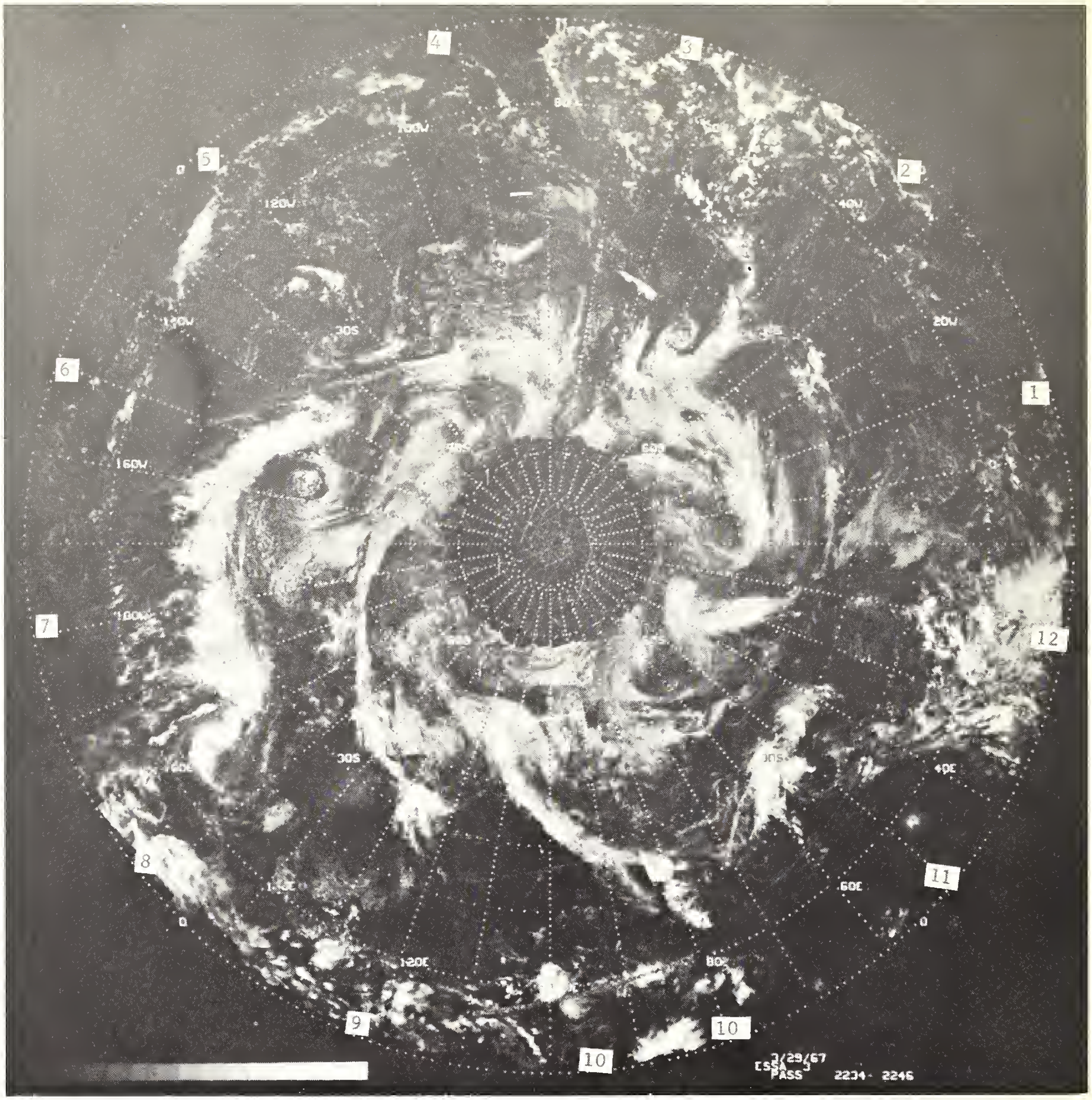
3/29/67
ESSA 5
PASS 2234- 2246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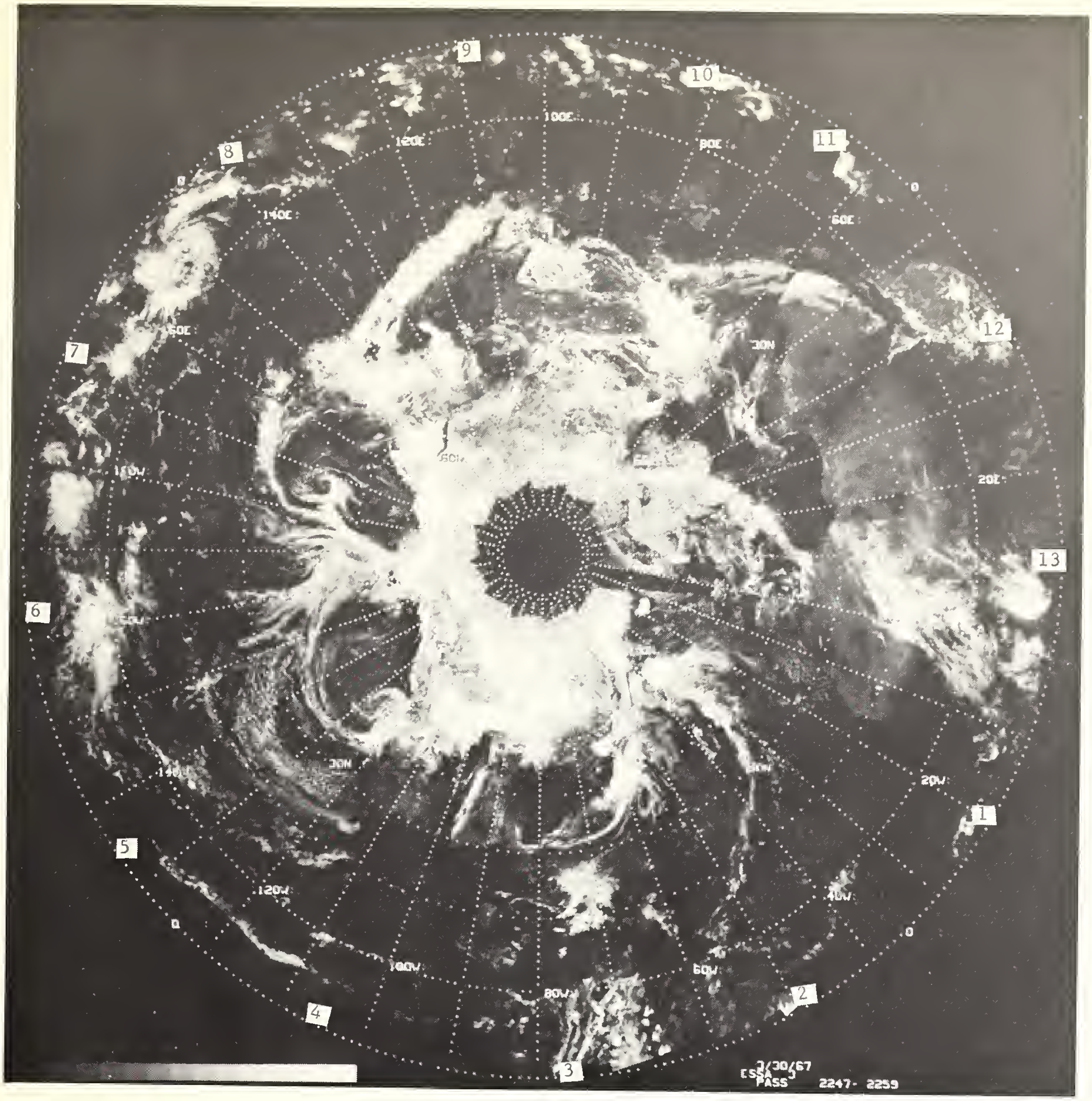
3/29/67
ESSA 3
PASS 2234-2246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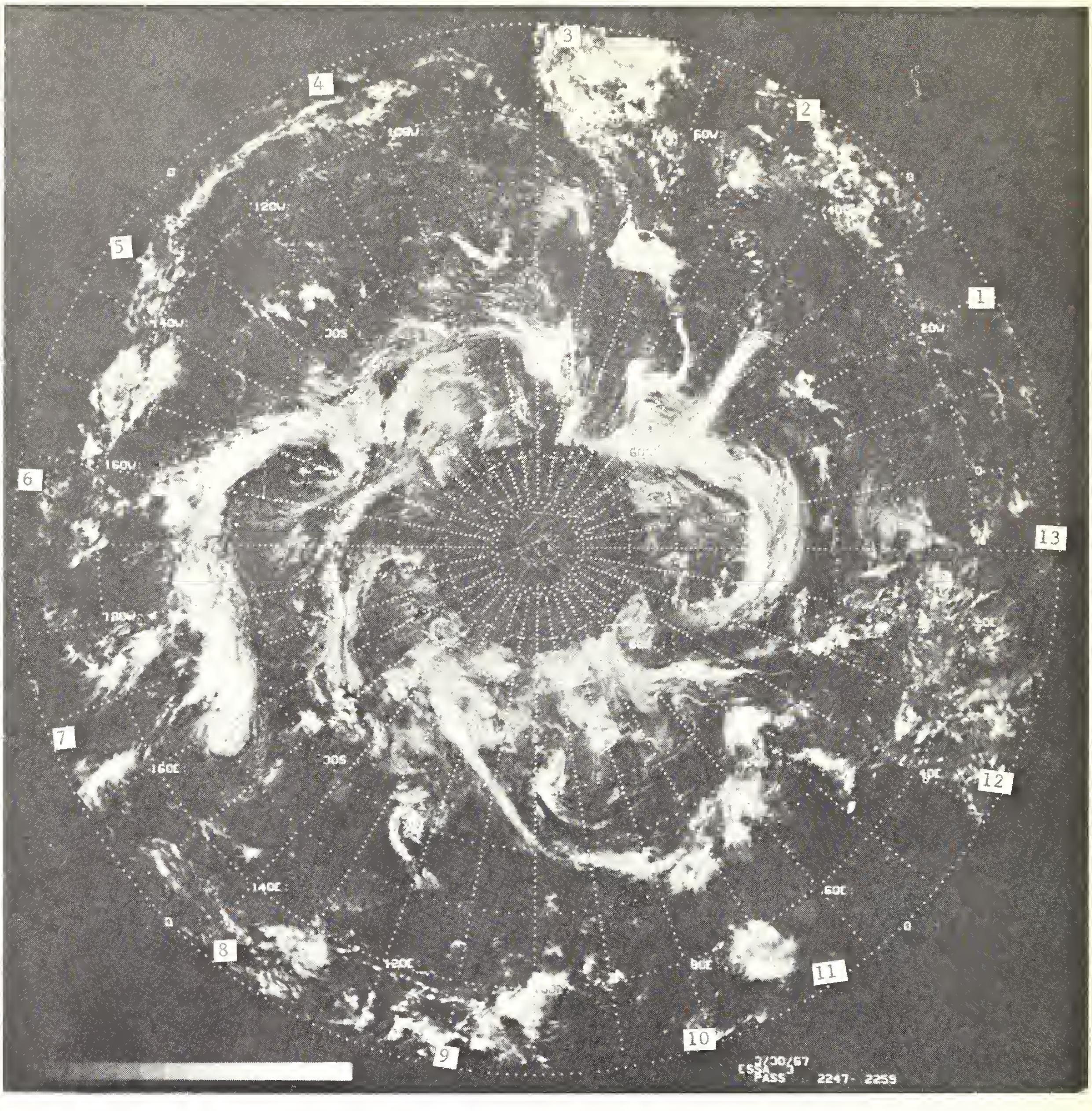
3/30/67
ESSA 5
PASS 2247- 2259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